PUBLICATIONS OF THE MINNESOTA ACADEMY OF SOCIAL SCIENCES

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PAPERS AND PROCEEDINGS

OF THE

SECOND ANNUAL MEETING

OF THE

Minnesota Academy of Social Sciences

EDITED BY

FRANK L. McVEY

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The Minnesota Academy of Social Sciences

The people of a commonwealth can advance toward better conditions of government and more efficient administration only as public opinion grows more enlightened. Such public opinion is formed largely through the medium of the press, the schools, and associations organized to discuss questions of importance. With a view to providing a medium through which men may confer together upon important political, social, economic, and historical questions affecting the life of the state, the Minnesota Academy of Social Sciences has been organized.

It is believed that the influence of an organization whose members consist of persons interested in these questions would count much toward the formation of sound and rational doctrine relating to legislation and the social and industrial welfare of the people of Minnesota. It is equally certain that the publication of the papers presented at the annual meetings of the organization would stimulate thought upon these questions and that a journal would serve as a suitable means of communication between those interested in the public questions coming up from time to time in the state.

The absence of any state association dealing with these phases of social life suggests the creation of an association that would be state-wide and open to persons interested in these subjects. It needs no argument that the existence of such an organization with annual and special meetings held in the different towns and cities of the

state, and the publication of a journal devoted exclusively to matters interesting the citizens of Minnesota, would furnish a nucleus for an enlargement of public opinion on many questions.

To this end the Academy was organized in April of 1907, a constitution drafted and officers elected. The first annual meeting was held at the University of Minnesota, December 5 and 6, 1907.

The papers and proceedings of the first annual meeting were published in 1908 under the subtitle Taxation. The second annual meeting considered papers relating to the commonwealth of Minnesota, which are published in this volume.

CONSTITUTION

I. NAME

The name of this organization shall be the MINNESOTA ACADEMY OF SOCIAL SCIENCES.

II. OBJECTS

(a) The encouragement of the study of economic, political, social and historical questions particularly affecting the state of Minnesota.

(b) The publication of papers and other material relating to the same.

(c) The holding of meetings for conference and discussion of such questions.

III. MEMBERSHIP

Any person approved by the executive committee may become a member of the Academy upon payment of two dollars and after the first year may continue a member by paying an annual fee of two dollars.

IV. OFFICERS

The officers shall consist of a president, three vice-presidents, and a secretary-treasurer.

V. STANDING COMMITTEES

The committees of the Academy shall consist of an executive committee, a publication committee, and such others as may from time to time be required.

The executive committee shall consist of the officers of the organization and three elected members.

The publication committee shall consist of six persons appointed by the president.

The officers and members of committees shall hold their positions for one year.

VI. DUTIES OF OFFICERS AND COMMITTEES

The duties of the officers shall be such as usually pertain to such positions. The executive committee shall have charge of the general interests of the Academy. It shall have power to determine the time and place of meetings.

The publication committee shall have charge of the publications of the Academy.

VII. AMENDMENTS

Amendments, when approved by the executive committee, may be adopted by a majority vote of members present at any meeting of the Academy.

OFFICERS FOR 1909

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THOMAS A. POLLEYS, St. Paul.

VICE-PRESIDENTS

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HON. CLARENCE B. MILLER, Duluth.
DR. A. C. ROGERS, Faribault.

SECRETARY-TREASURER

DR. FRANK L. MCVEY, Minneapolis.

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JUSTICE CHAS. B. ELLIOTT, Minneapolis.
PROF. E. V. ROBINSON, Minneapolis

PUBLICATION COMMITTEE

JUSTICE E. A. JAGGARD, St. Paul.
PROF. A. B. WHITE, Minneapolis.
ADOLPH O. ELIASON, Montevideo.
PROF. GEORGE O. VIRTUE, Winona.
HON. ALVAH EASTMAN, St. Cloud.
PROF. H. J. FLETCHER, Minneapolis.

The Second Annual Meeting

The second annual meeting of the Minnesota Academy of Social Sciences was held in the auditorium of the Law School of the University of Minnesota Thursday and Friday, December 3 and 4, 1908. The program carried out was as follows:

PROGRAM

GENERAL SUBJECT—THE COMMONWEALTH OF MINNESOTA

THURSDAY EVENING, DECEMBER 3RD, AT 8:00 P. M.

PROF. H. J. FLETCHER, Presiding

GENERAL CONSIDERATIONS

The Commonwealth—Address by President, Justice C. B. Elliott, Supreme Court of Minnesota

State and Federal Police Power—Justice C. L. Brown, Supreme Court of Minnesota

Present Problems Involved in Minnesota's Statehood—Attorney General E. T. Young

Discussion

FRIDAY MORNING, DECEMBER 4TH, AT 9:30 A. M.

JUSTICE CHAS. B. ELLIOTT, Presiding

MINNESOTA'S HERITAGE

The Geological and Geographical Structure of Minnesota —Mr. Warren Upham, Secretary Minnesota Historical Society

The Wealth of Minnesota—Prof. E. V. Robinson, University of Minnesota

The Agricultural Possibilities of Minnesota—Mr. George Welch, Secretary State Immigration Bureau

The Origin and Development of Railroads in Minnesota—Mr. Rasmus Saby, University of Minnesota

Discussion

Luncheon was served at 12:30 for members of the Academy and guests at the home of Mr. Frank L. McVey, 822 7th St. S. E.

FRIDAY AFTERNOON, DECEMBER 4TH, AT 2:30 P. M.

HON. CLARENCE B. MILLER, Presiding

WHAT HAS MINNESOTA DONE WITH HER HERITAGE?

The Policy of the State Regarding Timber Lands—Prof. G. O. Brohough, Red Wing Seminary

The Policy of the State Regarding Ore Lands—Mr. F. A. Wildes, State Inspector of Mines

The Policy of the State Regarding Agricultural Lands—Prof. Wm. Robertson, Crookston Experiment Station

Discussion

Through the courtesy of the Beta Theta Pi fraternity the Academy was permitted to invite members and guests to take the evening meal at the Beta Theta Pi chapter house.

FRIDAY EVENING, DECEMBER 4TH, AT 8:00 P. M.

JUSTICE CHAS B. ELLIOTT, Presiding

SOCIAL CONDITIONS IN MINNESOTA

The Origin and Distribution of Population in Minnesota —Prof. A. E. Jenks, University of Minnesota

Social Legislation in Minnesota—Mr. Wm. McEwen, Secretary State Federation of Labor

The Development of State Charitable Institutions in Minnesota—Mr. G. A. Merrill, Superintendent School for Dependent Children, Owatonna

Minnesota's Educational System and its Present Status —Prof. A. W. Rankin, University of Minnesota

Discussion

REPORT OF SECRETARY-TREASURER

The second year of the Minnesota Academy of Social Sciences closes with this session. Two programs have been presented, and one of them, under the title, Proceedings of the Minnesota Academy of Social Sciences, 1907, has been published in book form.

The number of names which have been enrolled upon the membership list of the Academy is 109. One death, that of D. B. Thomas of Minneapolis, and three resignations, leave the total membership to date at 105. This list is made up as follows:

Individuals—		
In state	81	
Outside state	11	92
State and college libraries—		
In state	3	
Outside state	10	13
Total		105

The total number of members in the state is 84. All of the members with the exception of ten have paid their dues for 1908.

During the two years of the Academy's history, $380 has been collected from the membership in the form of dues and contributions, and $124.60 from sales of the proceedings to libraries and individuals not on the regular subscription list, making the total receipts of the Academy $504.60. Of this amount, $424.90 has been expended for publication of the proceedings, expenses in connection with the annual meetings, and general office expenses. The balance on hand December 3, 1908 is $79.70.

Aside from the expenses of this meeting, the Academy has no outstanding indebtedness. The expenses of the meeting, however, will be about $40, so that the new year will start in with a balance on hand of about $40.

The cost of publishing the proceedings for the coming year will be considerably more than it was for the publication of the first volume, due to the fact that one more session has been held and the number of speakers is considerably larger than it was last year. The expense of publication, however, should come within $350.

There are now on hand 70 bound copies of the proceedings and about 220 paper copies. The edition of 500 was disposed of as follows:

To members	109	
Sales	72	
Congressional Library (Copyright)	2	
Reviews	15	
Complimentary copies	7	
Exchanges	5	
		210
On hand	290	290
Total		500

No special effort has been made to extend the membership during the year. Invitations were sent to the different members of the Bar Association calling their attention to the Academy, but outside of occasional solicitations on the part of the secretary no other effort has been made to extend the list. The next secretary should solicit the various principals and superintendents of schools throughout the state to become members, and there should be no difficulty in increasing the membership to 200 before the close of the year.

The start which the Academy has made in the two years of its history is very encouraging and should stimulate

every member to do the best he can to develop in this state an active organization interested in economic, political and social questions.

Respectfully submitted,
FRANK L. MCVEY,
Secretary-Treasurer.

TREASURER'S REPORT

RECEIPTS

	1907	1908	Total
Membership dues	$144.00	$186.00	$330.00
Contribution, W. L. Harris	50.00		50.00
Sales, Proceedings		124.60	124.60
	$194.00	$310.60	$504.60

DISBURSEMENTS

		1907	1908	Total
Postage, general correspondence		$ 10.80	$ 11.97	$ 22.77
Proceedings,				
Publication	$270.20			
Mailing and adv.	26.00			
			296.20	296.20
Miscellaneous expenditures,				
Printing, prospectus and stationery	25.00	25.00	5.00	
Clerk hire	5.00			
Express	.25		.25	
Exchange on checks.	1.75	.30	1.45	32.00
Annual meetings ($22.65 of 1907 meeting paid in 1908)		64.18	9.75	73.93
Total disbursements		$100.28	$324.62	$424.90
Balance on hand Dec. 3, 1908			$ 79.70	

MEMBERS AND SUBSCRIBERS

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YARDLEY, W. H., St. Paul, Minn.
YOUNG, F. G., University of Oregon, Eugene, Ore.

*Deceased.

GENERAL SUBJECT

The Commonwealth of Minnesota

First Session

GENERAL CONSIDERATIONS

THE COMMONWEALTH AND THE NATION

By Charles B. Elliott

The second meeting of the Academy is held under circumstances which are peculiarly auspicious and pregnant with possibilities for future usefulness. The success of the organization has been greater than was anticipated by the most sanguine of those who conceived the idea that through it unselfish and useful service could be rendered by encouraging the careful, nonpartisan and scientific study of public questions, which are of immediate interest to the people of the state.

The necessity for such special work becomes every year more apparent. Probably no state in the union is more vitally interested in a greater diversity of questions than is Minnesota. She has passed swiftly from the condition of a frontier community, with its simple, primitive life and government, to that of a mature commonwealth, with a full complement of social, legal and governmental difficulties. The problems connected with the conservation and development of natural resources through irrigation and drainage, the introduction of new agricultural methods, more scientific methods of taxation, the encouragement, control and development of iron mining, and the manufacture of its products within our borders, the complex commercial, industrial and labor difficulties, must now be

solved by the people who, but a few years ago, were devoting all their energies to raising wheat and speculating in virgin town lots. This meeting will be devoted to the study of the physical, racial, social, legal and governmental conditions under which the people of the state must do this work.

Both territory and people are necessary to a state. Within the territorial limits of the United States there can be but one nation; one complete organism charged with the government of all the inhabitants. It operates through two governmental organizations, acting exclusively or concurrently upon the same individuals. The United States—the nation— is composed of the central and the state governments, each supplementing the other. Without the central government the states are incomplete; without the states, the central government is but a fragment. This nation, this member of the family of nations, possesses all the powers which are possessed by any nation, but they are distributed between the central and state governments by a system of grants, reservations and references which is embodied in the constitution of the United States. The particular fields of the vast domain of government which were to be occupied by each of these governments were as clearly worked out and defined as was possible under the circumstances, in view of the limitations of language. In a few instances the language of the constitution of the United States was left intentionally ambiguous. In the course of time new physical and social conditions created new governmental duties and doubts have frequently arisen as to the fields in which they fell.

Different conceptions of the nature and duties of government have affected the methods of government and the extent of governmental functions, but they nevertheless always remain the same in kind. Certain things have been undertaken by nearly all governments, and may be

called essential functions. Of this nature are, the regulation of trade and industry, the maintenance of highways, including the regulation or management of transportation agencies; the maintenance of postal and telegraph systems; the manufacture or the regulation of the manufacture of necessities and conveniences such as gas and water; sanitation; education; the regulation of labor; the care of the poor and incapable; the care and cultivation of forests and streams; sumptuary laws, regulating living and personal conduct; the keeping of order and the providing of protection to persons and property from violence and robbery; the fixing of the legal relations between man and wife and between parent and child; the definition and punishment of crime; the regulation of holding, transmitting, and interchange of property and the determination of its liability for debts and for crime; the determination of contract rights between individuals; the administration of justice in civil cases, the determination of the political duties, privileges, and relations of individuals, and the regulation of the dealings of the state with foreign powers, the preservation of the state from external dangers, and the advancement of its international interests. All these powers and functions are exercised by the nation we call the United States, either through the central or the state governments.

Recent years have witnessed a revival of the old controversy over the respective powers of the central and state governments. The central government is gradually occupying the twilight zone which is supposed to lie between federal and state jurisdiction. But the principle increase of federal activity has been in new fields of activity. There is a popular demand that certain tendencies in our commercial life shall be controlled by government, and the people seem to believe that in this work the central government will be more efficient than the states. It has thus been called upon to assume duties for which no

warrant can easily be found in either the express or the implied grants of the constitution. In some instances it has gone ahead with the work, as Jefferson did when he purchased Louisiana, trusting that the beneficent results would in the eyes of the people excuse any constitutional derelictions. The President has recently invoked the theory that an inherent power rests in the nation, outside of the enumerated powers conferred upon it by the constitution, in all cases where the object involved is beyond the power of the several states, and is a power ordinarily exercised by sovereign states. In his Harrisburg speech, he said, "In some cases this governmental action must be exercised by the several states individually. In yet others it has become increasingly evident that no efficient state action is possible, and that we need, through executive action, through legislation, and through judicial interpretation and construction of law, to increase the power of the federal government. If we fail thus to increase it, we show our impotence.

Secretary Root has warned the states that if they fail to do the work which properly devolves upon them, the central government will find some way of assuming the burden. In speaking of the control which must be exercised in certain cases, Mr. Root frankly says that, "It may be that such control would better be exercised in particular instances by the government of the states, but the people will have the control they need, either from the states or the national government, and if the state fails to furnish it in due measure, sooner or later constructions of the constitutions will be found to vest the power where it will be exercised—in the national government." This is a statement of fact, and not of law or theory, and no one who has studied the constitutional history of the United States can for a moment doubt its truth.

Recent extensions of the functions of the central government have been generally along lines which have but

seldom brought it into conflict with the states. It has entered fields which were not being worked by the states. Gradual extensions of power through the liberal construction of express powers is soon forgiven if the result proves to be for the general good. Commercial and industrial conditions seem to require unity of regulation and control, and it will not be surprising if the whole subject ultimately passes under the control of congress. The connection between interstate and intrastate commerce is so close that it may finally be held that the latter cannot be regulated without, in effect, regulating the former.

Such assertions of power rest upon an assumed legal basis, and are fairly open for argument. But there is another field of work in which the national government is now very active and for which it is doubtful if even a shadow of constitutional authority can be found. But it is in the nature of service for the people, and is thankfully accepted, with indifference to the constitutional right of the government to furnish it. It comes freely, and without apparent cost. National appropriations fall upon us like the dew from heaven. For instance, where in the constitution is to be found a suggestion of a grant of power to establish the department of agriculture? And yet the government annually spends great sums of money in this good work. In a recent bulletin, this department called the attention of the farmers to its publications on about one thousand different subjects, including the art of raising calves, the feeding of chickens, the control of coddling moths, the cooking of meats and vegetables, the growing of cucumbers, the control of the boll weevil, the use of skim milk for feeding calves, the feeding of ducks, the remedy for flies on cows, the growing of peanuts, the building of hog pens, the feeding of hogs, the clearing of flies from houses, the making of jellies, the shearing of sheep, and hundreds of similar subjects. It would have been inter-

esting to have heard the remarks of Jefferson on a proposal for the appropriation of money by the national government to investigate the methods of feeding ducks, or of keeping flies out of houses! What would Marshall have said if a representative of the national government had appeared on his Virginia farm, and commenced lassoing his cattle and examining them for ticks? Under the provisions of an act of congress of June 30, 1906, $82,500 was appropriated to enable the department of agriculture to experiment as to the best methods of eradicating the tick, and the report states that the inspectors examined the cattle in the southwestern states, "covering their territory systematically, roping and examining cattle wherever found, and informing the owners of infected cattle of the most practical methods of getting rid of the ticks."

There is also a serious question as to the power of congress to engage in the work of reclaiming arid lands. In the recent case of Kansas v. Colorado, 206 U. S. 87-90, the supreme court of the United States said, "Turning to the enumeration of the powers granted to congress by section 8, Article I of the Constitution, it is enough to say that no one of them by any implication refers to the reclamation of arid lands." Yet the work has assumed immense proportions, and forty millions of dollars have been allotted the work in sixteen different states. You will observe that these are instances in which the central government is devoting the public money toward something which the people want, and as it seems to be in the nature of a donation, and relieves them from doing the work at their own expense, no one objects.

Some of the powers exercised by the national government are so impressive in their nature and overwhelming in their effect that we constantly lose sight of the fact that the real, effective, every day government which touches us at every stage and turn of our daily existence is that of

the state. In this the imagination plays an important part. Patriotism, national pride, and all the sentiments which center around the flag are associated with the great national power, and not with the government that immediately protects persons and property, determines the validity of our contracts and the titles to our homes.

We live under the most complicated and complex system of government in existence. It is one which can be operated successfully only by a very intelligent people, possessed of a highly developed capacity for the science of government. It is so complicated that it is almost impossible to explain it intelligibly to a person accustomed only to the simple systems of England and France. Some ridicule has been cast upon Gladstone for his description of the American constitution as "The most wonderful work ever struck off at a given time by the brain and purpose of man." Yet, in a certain sense, he was right. It is true that the men who devised the system were not doctrinnaires. They had no faith in the theory which was so soon to take complete possession of their friends in France—that a new system of government could be built like a machine, or ordered like a new suit of clothes. They would as soon have thought of ordering "a new suit of flesh or skin." As so eloquently said by Lowell, "They knew that it is only on the roaring loom of time that the stuff is woven for such a vesture of their thoughts and expressions as they were meditating." But the form of the new government, the interrelation of parts, the division of the central government into departments, and its legislature into two chambers, and the arrangement by which the federal government acts directly upon the individual, was something new in the history of government. It was deliberately devised, constructed and carefully put together after each component part had been shaped and made ready for the place it was destined to fill.

The members of the convention had definite ideas as to

the ends to be accomplished, and they constructed an instrument which they hoped and believed would serve the purpose. The states were already in existence. They had taken form and grown as other communities have grown, largely unconsciously, to meet and conform to the genius and peculiarities of the people. These political organisms were to be preserved and fitted into the new structure which was to stand before the world,—looking outward. The people of that day "sometimes talked like rank democrats, but they generally acted like intelligent, progressive Englishmen."

Philosophers differ as to the ends of the state. Hegel tells us that it is morality. Von Holtzendorff, that it is power, individual liberty, and the general welfare. The framers of the constitution were not particularly interested in the ultimate ends of the state, but they had very definite views as to the purposes for which they were organizing the new nation. It was "In order to form a more perfect union, establish justice, insure domestic tranquility, provide for the common defence, promote the general welfare and secure the blessings of liberty to ourselves and our posterity." The central government they devised for this purpose was framed along lines then recognized as proper for a constitutional government. It accepted the theory of the separation of powers, popularly supposed to have originated with Montesquieu and which had commonly been adopted by the states. All the powers of the new government were distributed under the three heads, the executive, the legislative, and the judicial, which, as John Adams said, "comprehend the whole of what is meant by government."

For the purposes we have in view it is necessary to refer but briefly to the executive power. The whole executive power of the nation is vested in the president. In dealing with the rest of the world, he speaks for the nation. At home he is popularly supposed to supervise the

universe, but this is a delusion. And yet, as Mr. Bryce says, "The president enjoys more authority, if less dignity, than an European king." Mr. Farlie says, "Within the sphere of national administration, his effective authority is of more value than that of most constitutional monarchs of Europe, or even of their prime ministers." He wields tremendous power through the selection and appointment of national, and particularly judicial officers, who, through their decisions, affect the course and destinies of the nation to a degree far beyond popular appreciation. A great deal of the power of the president results from the duty which the constitution expressly imposes upon him, "to take care that the laws be faithfully executed." The national executive, however, has little direct connection with the states.

Art. III, sec. 2, of the constitution provides, that the judicial power of the United States shall extend (1) generally—to all cases in law or equity, arising under this constitution, the laws of the United States, and treaties made, or which shall be made, under their authority. And (2) specifically—to (a) all cases affecting ambassadors, other public ministers, and consuls; (b) all cases of admiralty and maritime jurisdiction; (c) controversies to which the United States shall be a party; (d) controversies between two or more states; (e) controversies between a state and the citizen or citizens of another state; (f) controversies between citizens of different states; (g) controversies between citizens of the same state, claiming lands under grants from different states; and (h) controversies between a state or the citizens thereof, and foreign states, citizens or subjects. The eleventh amendment provides that "The judicial power shall not be construed to extend to any suit at law or in equity commenced or prosecuted against one of the United States by citizens of another state, or by citizens or subjects of any foreign state."

This is a clear and detailed enumeration of the whole of the judicial power of the central government and so it was undoubtedly understood by the men who drafted and adopted the constitution. And yet Mr. Justice Brewer, in the recent case of Kansas v. Colorado, has announced the doctrine that the constitution contains a general grant of judicial power subject only to such express limitations as are contained therein. This is a startling proposition, and if adhered to by the court opens the entire field of jurisdiction to the national courts. The history of the federal judiciary well illustrates the danger of prophecy. Hamilton believed that "The judiciary is beyond comparison the weakest of our departments of power." Jay resigned the office of chief justice of the United States to become governor of New York, and when tendered a reappointment, declined on the plea of ill health, with the statement: "I left the bench perfectly convinced that under a system so defective, it would not obtain the energy, weight, and dignity which was essential to its affording due support to the national government, nor acquire the public confidence and respect, which, as the last resort of justice in the nation, it should possess."

Jefferson suffered from mental strabismus, induced by hatred of his political enemies, but he saw more clearly than did the friends of the national government the potential power of the federal judiciary. He was very prone to assign improper motives to other people. He was so constituted temperamentally that he believed that every person who did not march under his banner was a diabolical monarchist, perpetually plotting the ruin of the country. He believed that those emissaries of misrule, Marshall and Jay, had been placed on the bench by those other malignant enemies of the people, Washington and Adams, that they might deliberately use the judicial power to destroy the states and affect a consolidation of the government. In 1820 Jefferson wrote that, "The judiciary of

the United States is the subtle corps of miners and sappers, constantly working underground to undermine the foundations of our constitutional fabric. They are construing our constitution from a co-ordination of a general and a special government, to a general and supreme one alone."* About a year later he wrote to a friend that "the judiciary branch is the instrument, which, working like gravity, without intermission, is to press us at last into a consolidated mass."† Again he wrote, "It has long been my opinion * * * that the germ of dissolution of our federal government is in the constitution of our federal judiciary; an irresponsible body * * * working like gravity by day and by night, gaining a little today, and a little tomorrow, and advancing its noiseless step like a thief over the field of jurisdiction, until all shall be usurped from the states and the government of all be

The forebodings of both Jay and Jefferson have happily not been fulfilled. The federal judiciary has become powerful, and has played a great and a dignified part in the development of the nation. It has blazed the constitutional path along which the country has traveled to its present position as one of the great powers of the world. But many wise and patriotic people believe that under the exigencies of the occasion these courts have sometimes strained their jurisdiction to the detriment of the just rights and powers of the states, and the hurt of the dignity of the commonwealths. But the growth of the federal judicial power was inevitable, natural and generally desirable. It resulted from the very nature and framework of the federal government, the independence of the departments, the dignity of jurisdiction over states, and from the fact that the supreme court is the final judge of its own jurisdiction. It has been said that jurisdiction is consolidated into one."‡

*Jefferson's Works, Fed. Ed. Vol. 11, Page 177
†Ibid, Vol. 11, Page 196
‡Jefferson's Works, Library Ed. Vol 15, Page 331

the thief of jurisdiction, and *boni judices est amplaire jurisdictionem* since became a maxim of the common law. Although judges may consciously guard against this tendency, the inevitable result is always the same. The fertile field which is unprotected or unoccupied by a weaker or less persistent power, is gradually encroached upon and occupied and title obtained thereto, as by recission or accretion riparian land is increased an hundredfold.

It is perfectly clear that the framers of the constitution and the people who discussed and adopted it, understood that only such judicial powers were granted the central government as were expressly enumerated, and such as were properly incident thereto. This is the necessary deduction from the conceded principle that the government is one of enumerated powers. In the Federalist, Hamilton, after examining each enumerated grant, says, "This constitutes the entire mass of the judicial power of the United States." Returning to the subject, he adds, "In like manner the authority of the federal judicatures is declared by the constitution to comprehend certain cases particularly specified. The expression of these cases marks the precise limits beyond which the federal courts cannot extend their jurisdiction, because the objects of their cognizance being enumerated, the specification would be nugatory if it did not exclude all ideas of more extensive authority." In Chisholm v. Georgia, 2 Dall. 476, Chief Justice Jay said that the judicial power of the United States extends to the ten descriptions of enumerated cases. In Martin v. Hunter's Lessee, 1 Wheat. 304, Mr. Justice Story said, "It being then established that the language of this clause is imperative, the next question is as to the cases to which it shall apply. The answer is found in the constitution itself. The judicial power shall extend to all the cases enumerated in the constitution." So Mr. Justice Miller, in his lectures on the Constitution,

states that Art. III, sec. 2, "defines and marks out the judicial powers of the United States, by providing to which cases it shall apply."

But the court now draws a very important and far reaching distinction between the manner in which legislative and judicial power is granted in the constitution. "By reason of the fact," says Mr. Justice Brewer, "that there is no general grant of legislative power, it has become an accepted constitutional rule that this is a government of enumerated powers. * * * On the other hand, in Art. III, which treats of the judicial department, —and this is important for our present consideration—we find that sec. 1 reads that 'The judicial power of the United States shall be vested in one supreme court, and in such inferior courts as the congress may from time to time ordain and establish.' By this is granted the entire judicial power of the nation. Sec. 2, which provides that 'The judicial power shall extend to all cases in law and equity under the constitution, the laws of the United States, and etc.,' is not a limitation nor an enumeration. It is a definite declaration, a provision that the judicial power shall extend to—that is, shall include—the several matters particularly mentioned, leaving unrestricted the general grant of the entire judicial power. There may be, of course, limitations on that grant of power, but if there are, they must be expressed, for otherwise the general grant would vest in the courts all the judicial power which the new nation was capable of exercising * * * * Speaking generally, it may be observed that the judicial power of a nation extends to all controversies justiciable in their nature, the parties to which, or the property involved in which, may be reached by judicial process; and when the judicial power of the United States was vested in a supreme and other courts, all the judicial power which the nation was capable of exercising was vested in those tribunals, and unless there be some limita-

tions expressed in the constitution, it must be held to embrace all controversies of a justiciable nature, no matter who may be the parties thereto."

As remarked by Chief Justice Baldwin,[1] this language seems authority for the proposition that every controversy that can properly be made the subject of a law suit, and arises within the territorial limits of the United States, no matter who may be the parties thereto, may be given over by congress for final disposition to the federal courts. A suit on a promissory note, made by a citizen of Minnesota, in favor of and held by a citizen of Minnesota, and payable in that state, can, if congress so wills, be maintained in the circuit court of the United States, although no question of federal right is in any way involved in the cause of action or in the defence. If this is the doctrine of the court, then let us pray that the news be kept from the shades of Jefferson, Jay, Marshall, Hamilton, Story, Webster, Miller, and the rest of that goodly constitutional group that their bones may rest in peace in their honored sepulchres.

The jurisdiction of the federal courts over the matters referred to in the constitution is exclusive in only a few instances. When jurisdiction depends on the diverse citizenship of the parties, the litigant may bring his action in either the federal or state court. If the action is brought in the state court, it will there proceed to final judgment, unless the defendant at the proper time avails himself of the right to remove the case to the federal court. So the state courts have concurrent jurisdiction with the federal courts over all actions which arise under the constitution of the United States and laws of congress,—a fact that is frequently forgotten in the discussion of federal and state relations. In Robb v. Connoly, 111 U. S. 624, the supreme court of the United States

(1) See 18 Yale Law Journal 1, for a discussion of the Judicial Power

said, "A state court of original jurisdiction, having parties before it, may consistently with existing federal legislation, determine cases at law or equity arising under the constitution or laws of the United States, or involving rights dependent upon such constitution or laws. Upon the state courts, equally with the courts of the union, rests the obligation to guard, protect and enforce every right granted or secured by the constitution of the United States and the laws made in pursuance thereof, whenever those rights are involved in any proceedings before them; for the judges of the state courts are required to take an oath to support that constitution, and they are bound by it and the laws of the United States made in pursuance thereof and all treaties made under their authority, as the supreme law of the land, 'anything in the constitution or laws of any state notwithstanding.' If they fail therein, and withhold or deny rights, privileges, or immunities secured by the constitution and laws of the United States, the party aggrieved may bring the case from the highest court of the state in which the question can be decided, to this court for final and conclusive determination."

Cases of this character are constantly being determined by the state courts. As said by a recent intelligent foreign writer, "The federal and state courts are interdependent, co-operating systems, and together constitute one vast machine of American justice."*

In a recent book on the American Constitution, by Mr. F. J. Stimson, in connection with a discussion of the extent to which business is being transacted by corporations, and the facility thus afforded for the creation of an artificial diversity of citizenship, the statement is made that "the great majority of business law is growing to be between parties who are technically of different states, and this state of things has transferred the bulk of business from the state to the federal courts." To determine the accur-

*Miyakawa; Powers of the American People, page 232

acy of this statement, I have had an examination made of the records of the state and federal courts in Minnesota. Minnesota may be taken as an average state in size, population and diversity of commercial and industrial business, and what is true in Minnesota may safely be assumed to be true throughout the United States.

The state, for federal judicial purposes, is divided into six divisions. Until about five years ago all the business was transacted by one United States district judge, with the occasional assistance of a circuit judge and a district judge from an adjoining state. Since the creation of the circuit court of appeals in 1891, the circuit judges have given practically no attention to other than appellate work. There are now two United States district judges for the state of Minnesota, assisted by commissioners and referees. For the transaction of the *nisi prius* work in the state courts there are at present thirty-six judges and at least a dozen municipal judges sitting in courts of record. In each county there is also a court commissioner, a probate judge, and numerous justices of the peace who transact minor, but not therefore unimportant judicial business.

It is not possible with a reasonable amount of labor to obtain exact data from which to determine the exact amount of business transacted by the federal courts in the state of Minnesota. For the third and fourth divisions, respectively composed of Ramsey and surrounding counties, and Hennepin and surrounding counties, the records disclose the following interesting comparisons with the work in the state district courts for the counties of Ramsey and Hennepin. This data covers the entire work of the courts from June 6, 1906, to date.

UNITED STATES COURTS FOR

	THIRD DIVISION			FOURTH DIVISION		
	Dist.	Cir.	Total	Dist.	Cir.	Total
Civil	7	156	163	29	141	170
Criminal	21		21	30		30
Bankruptcy	281		281	295		295
Total			465			495

STATE DISTRICT COURTS FOR

	RAMSEY COUNTY	HENNEPIN COUNTY
Civil	5842	8601
Criminal	328	1000
Total	6170	9601
Juvenile	1315	1143
Torrens	365	167
Total	7850	10,911
Total number of federal cases		960
Total number of state cases		18,761

Bankruptcy litigation in the federal courts is largely administrative, and this is also true of land registration proceedings in the state courts. Most of the bankruptcy work is transacted by a special officer known as the referee in bankruptcy. The juvenile courts in both Ramsey and Hennepin counties occupy much of the time of one district judge. As far as the character of the cases is concerned, it is probable that there is very little difference between those tried in the United States circuit court, and in the state district courts. In both courts personal injury litigation is much in evidence. The criminal business of the United States district court is comparatively insignificant, both as to quantity and quality. Much of it does not rise far above the dignity of the cases ordinarily tried in the state municipal courts. It is thus apparent that in this state Mr. Stimson's statement that the great bulk of the business has been transferred from the state to the federal courts is incorrect.

The appellate jurisdiction of the federal courts is not important for the purposes we have in view. Ordinary cases may be taken by appropriate proceedings from the federal trial courts to the circuit court of appeals for the eighth circuit, which is composed of eleven states. This court sits at St. Paul, St. Louis, and Denver, and appeals lie from it in certain instances to the supreme court of the United States. In certain specified instances, an appeal lies directly from the circuit court to the supreme court of the United States.

The state supreme court hears all appeals from the inferior state courts, and its decision may be reviewed by the supreme court of the United States in cases only where rights are claimed under the constitution of the United States or laws enacted by the congress in pursuance thereof, or treaties, and the decision of the state court is against the validity of such claims. If the decision recognizes the claim, it is final. For the purpose of illustrating the comparatively insignificant number of cases out of the whole number determined by the supreme court in this state, that may be reviewed by the supreme court of the United States, it may be stated that during the past three years the supreme court of Minnesota has filed decisions in 1511 cases, of which five were carried to the supreme court of the United States.

It is thus apparent that the legal difficulties of the people who reside within this commonwealth are generally determined finally by the courts of the state, and that the work of the federal courts is in quantity quite limited. What has already been said of federal powers generally, is equally applicable in this connection. The power exercised by the federal courts in a few cases is so penetrating and far reaching in its effects as to serve to magnify the entire jurisdiction in the popular mind.

The purpose was to give to the central government the powers thought necessary to enable it to perform its

functions as the representative of the whole people in national affairs, and withdraw from the state all power to embarrass or interfere with the exercise of these national powers. It was therefore declared that congress shall have power to lay and collect taxes, duties, imports and excises; to pay the debts and provide for the common defense and general welfare of the United States, but all duties, taxes, imports and excises shall be uniform throughout the United States; borrow money on the credit of the United States; regulate commerce with the foreign nations, and among the several states and with the Indian tribes; establish an uniform rule of naturalization and uniform rules on the subject of bankruptcy throughout the United States; coin money, regulate the value thereof, and of foreign coins, and fix the standards of weights and measures; provide for the punishment of counterfeiting the securities and current coin of the United States; establish post offices and post roads; promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries; constitute tribunals inferior to the supreme court; define and punish piracies and felonies committed on the high seas and offensive against the laws of nations; declare war, grant letters of marque and reprisal and make rules concerning captures on land and water; raise and support armies, but no appropriation of money for that use shall be for a longer term than two years; provide and maintain a navy; make rules for the government and regulation of the land and naval forces; provide for calling forth the militia for executing the laws of the union, suppress insurrections, and repel invasions; provide for organizing, arming and disciplining the militia and for governing such parts of them as may be employed in the service of the United States, reserving to the states respectively the appointment of the officers and the authority

of training the militia according to the discipline prescribed by congress; exercise exclusive legislation over such district not exceeding ten miles square as may become the seat of government of the United States, and over all places purchased by consent of the legislature of the state, in which the same shall be for the erection of forts, magazines, arsenals, dockyards, and other needful buildings, and make all laws which shall be necessary or proper for carrying into execution the foregoing powers vested by this constitution in the government of the United States or in any department or officer thereof. These powers are not all prohibited to the state. Certain of them are concurrent and may be exercised by the state until actually exercised by congress.* The rule as stated in Holmes v. Jennison† is that "where an authority is granted to the Union to which a similar authority in the states would be absolutely and totally contradictory and repugnant, then the authority in the federal government is necessarily exclusive, and the same power cannot be constitutionally exercised by the state," or as stated by Hamilton: "This exclusive delegation, or rather this alienation of the state sovereignty, exists only in three cases: First, when the constitution in express terms grants an exclusive authority to the Union; second, when it grants an authority to the Union, and at the same time prohibits the state from exercising a like authority; third, where it granted an authority to the Union to which a similar authority in the states would be absolutely and totally repugnant." In the language of Chief Justice Tilghman, "where the authority of the state is taken away by implication. it may continue to act until the United States exercise their power, because, until such exercise, there can be no incompatibility."‡

In addition to the powers granted to congress by

*Bankruptcy, Sturges vs. Crowninshield, 4 Wheat. U. S.) 122
†14 Pet. (U. S.) 570
‡Houston v. Moore, 5 Wheat. 1

the 8th section of art. III, there are others which are found in other parts of the instrument, but to which we cannot take time to refer.*

The express grant of power to make all laws which are necessary and proper to carry into execution the enumerated powers, "neither enlarges any power specifically granted, nor is it a grant of any new power to congress; but it is merely a declaration for the removal of all uncertainty that the means of carrying into execution those otherwise granted are included in the grant."† Doubts have arisen upon the construction of the words "proper and necessary," but they have long since been cleared away. At a meeting of Washington's cabinet, when the question of the Bank was under consideration, Hamilton thus stated the rule of construction: "If the end be clearly comprehended within any of the specified powers, or if the measure have any obvious relation to that end or is not forbidden by any particular provision of the constitution, it may be safely deemed to come within the compass of the national authority."‡ In essentially the same language Chief Justice Marshall said§: "Let the end be legitimate; let it be within the scope of the constitution, and all means which are appropriate, which are plainly adapted to that end, which are not prohibited, but consistent with the letter and spirit of the constitution, are constitutional." The federal government has also by implication all the powers which are not ancillary to any enumerated power, but without which the government would be without the means of perpetuating its existence. "Powers thus exercised," says Story, "are what are called resulting powers arising from the aggregate powers of government."

Certain limitations upon the legislative power of the

*See Black, Const. Law, page 212
†2, Story Const. sec. 1243
‡Quoted in the Legal Tender Cases, 12 Wall. 641
§McCullough vs. Maryland, 4 Wheat. 316

central government are implied from the nature of the government. Thus, one congress cannot pass laws which a subsequent congress cannot repeal. General limitations upon the central government are found in the early amendments.

It is expressly provided that the privilege of the writ of habeas corpus shall not be suspended, unless when in cases of rebellion or invasion the public safety may require it; no bill of attainder or ex post facto law shall be passed; no capitation or other direct tax shall be laid unless in proportion to the census or enumeration hereinbefore directed to be taken; no tax or duty shall be laid on articles exported from any state; no preference shall be given by any regulation of commerce or revenue to the ports of one state over those of another; nor shall vessels bound to or from one state be obliged to enter, clear, or pay duties in another; no money shall be drawn from the treasury but in consequence of appropriations made by law; and a regular statement of the account of receipts and expenditures of all public money shall be published from time to time; and no title of nobility shall be granted by the United States, and no person holding any office of profit or trust under them shall, without the consent of the congress, accept of any presents, emolument, office or title of any kind whatever from any king, prince, or foreign state.

As already observed, certain of the powers which are expressly granted to the federal government, are by their nature national and exclusive, while others are general, and are granted to enable the government to make its granted powers effective. Thus the power of taxation, which in its nature is inherent in every sovereignty, is here limited in its purpose. It is granted to the federal government to enable it to "pay the debts and provide for the common defense and general welfare of the United States." The language used in the constitution is some-

what ambiguous, but it has been accepted as meaning that "congress shall have power to levy and collect taxes, etc., in order to pay the debts and provide for the common defense and general welfare of the United States."* The first two purposes thus expressed are clear and specific, but there has been much controversy as to the proper construction of the general welfare provision.

Taxes is a general word, which includes imposts, duties and excises, although the latter have specific meanings. Duties and imposts both relate to commercial intercourse, while excises mean taxes laid upon the manufacture, sale or consumption of articles within the country and upon licenses to pursue certain occupations. There are also limitations upon the manner in which certain taxes may be laid. Art. I, sec. 9, restricts the grant of the power of taxation contained in sec. 8 of the same article, by providing that "No capitation or other direct tax shall be laid, unless in proportion to the census or enumeration, etc." A capitation tax is a poll tax, and a direct tax is one which is levied upon the person who is to pay it or upon his land or personality or his business or income, and such a tax can only be levied in proportion to the population. An indirect tax is assessed upon the manufacturer or dealer in commodities in such manner that it may be added to the price of the commodity. So duties, imposts and excises must be uniform throughout the United States, that is, they must operate with the same effect in all places where the subject of the tax is found. No taxes, imposts or duties may be imposed upon any article exported from any state.

There is also an implied limitation upon the power of taxation as possessed by both the national and state governments, which is of the highest importance. Neither government may tax the essential agencies of the other.

*Pomeroy, Const. Law, page 273
I Story on the Const., pages 907-932
Miller, Lectures, pages 229-231

"The necessary independence of the state and federal governments imposes a limitation upon the taxing power of each. Neither can so exercise its own power of taxation so as to curtail the rightful power of the other, or interfere with the free discharge of its constitutional functions, or obstruct, embarrass or nullify its legitimate operation, or destroy the means or agencies employed by it in the exercise of these powers and functions."* Therefore a state cannot tax the circulation or stock of national banks, nor the bonds or other obligations of the United States without its consent, nor real estate owned by the United States, nor franchises bestowed by the United States upon a corporation created by it, nor the salary or emoluments of a federal officer. On the other hand, congress may not so adjust the revenue system of the United States so as to interfere with or defeat the operation of the state governments within the sphere of their legitimate activities. Therefore a municipal corporation, being an agency of the state government, cannot be taxed by the United States upon its municipal revenues. Nor can congress impose a tax upon the salary of a judicial officer of the state, nor upon a railroad owned by a state, nor may congress, through the operation of an internal revenue law, regulate the procedure in the state court by providing that the absence of a stamp shall render certain documents inadmissible in evidence.

Although not expressly granted, the power of eminent domain belongs by implication to the federal government so far as is reasonably necessary for the execution of its duties and functions. It may, through its own officers and courts, take private property whether situated within one of the states, or a district subject to its exclusive jurisdiction, where such is necessary to carrying on any of its legitimate undertakings. So congress has no general police power such as is possessed by the state, but it may

*Black, Const. Law, page 330

enact such laws as are necessary and proper to preserve public security, order, health, morality and justice when the occasion arises in connection with its granted powers.

Such, in a general way, are the legislative powers that may be exercised by congress. It is interesting to turn the pages of the Revised Statutes of the United States and note the subjects with which congress is mostly concerned. A great part of the volumes is devoted to legislation relating to the formal organization of the government, the various executive departments, such as war, navy, state, commerce and labor, justice, the post office and the interior, with their numerous bureaus, and the powers, duties, and compensation of their officers and agents. Much space is given to legislation for the territories and the District of Columbia, and it is here that congress enters the domain of private law. Customs, duties, and the elaborate mechanism for their collection; finance, banking, currency, revenue, the mails, claims against the government, public lands, timber, forest reserves and parks, navigation, treaties, foreign affairs and the diplomatic and consular service, patents, trademarks and copyrights, extradition, adulteration of food and food products, health and quarantine, mines and mining on government lands, crimes against the United States and criminal procedure, immigration, Indians, war and neutrality, naturalization, pensions, irrigation, libraries and scientific societies, weights and measures, coinage and appropriation, all appear prominently.

These are all subjects of great importance to the public welfare, although but few of them directly touch the every-day lives of the people in the way of restraint, or at least reach them by methods of indirection. The man who purchases a suit of clothes made of imported cloth, a cigar or a drink of liquor, pays his tax to the national government, but he pays it without thought, and without conscious inconvenience. The United States may borrow

many millions of dollars on its credit, and the average citizen be aware of the fact only as an item in the newspapers. The coining of money and the fixing of weights and measures may determine his prosperity, but he cannot easily trace the connection between cause and effect. He accepts the post office like the sunshine and good weather, as a benificent gift of some remote Providence. He has no present use for letters of marque and reprisal, unless they authorize him to prey upon his business competitors. If he is insolvent or the creditor of an insolvent, he learns of the existence of a national bankruptcy court through which the financially weary may pass to beds of ease. And so as to many other matters which are controlled by the great and impressive central government. They are of vital importance, but the agency through which the power is exerted is remote and its action is not so direct and immediate as that of the local government.

Leaving the field of national legislation, and coming to that occupied by the states, we observe that both the constitution of the United States and that of the several states contain certain restrictions upon the power of the states. Sec. 10, article 1, of the constitution of the United States enumerates certain things which the state shall not do, and others which they may not do without the consent of congress. Thus, (1) no state shall, *even with the consent of congress,* (a) enter into any treaty, alliance, or federation; grant letters of marque and reprisal; coin money; emit bills of credit; make anything but gold and silver coin a tender in payment of debts; pass any bill of attainder, ex post facto law, or a law impairing the obligation of contracts; (2) no state shall, *without the consent of congress,* (a) lay any imposts or duties on imports or exports, except what may be absolutely necessary for executing its inspection laws; and the net produce of all duties and imposts laid by a state

on imports and exports shall be for the use of the treasury of the United States; and all such laws shall be subject to the revision and control of congress; (b) lay any duty on tonnage; keep troops or ships of war in time of peace; enter into any agreement or compact with another state or foreign power; or engage in war unless actually invaded or in such imminent danger as will not admit of delay.

It is also provided that full faith and credit shall be given in each state to the public acts, records and judicial proceedings of every other state; the citizens of each state shall be entitled to the privileges and immunities of the citizens of the several states, and a person charged in any state with treason, felony or other crime, who shall flee from justice and be found in another state, shall, on demand of the executive authority of the state from which he fled, be delivered up to be removed to the jurisdiction of the state having jurisdiction over the crime.

The Civil War resulted in the adoption of the thirteenth, fourteenth and fifteenth amendments to the constitution, which deprive the states of the right to legalize slavery, or abridge the rights of the citizens of the United States to vote on account of race, color or previous condition of servitude. The fourteenth amendment which created a citizenship of the United States, provides that no state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty or property without due process of law, nor deny to any person within its jurisdiction the equal protection of the law. The central government must also guarantee a republican form of government to the state and this by implication deprived the state of the right to adopt any other form of government.

But the people of no commonwealth permit the leg-

islature to exercise all the powers of government which it would have, except as restricted by the constitution of the United States. The popular jealousy of the central government found expression in the first group of amendments which were adopted almost immeditely after the constitution went into operation. Many, if not all, of the state constitutions which were older than the national government contained similar provisions, and in all that have since been adopted care has been taken to guard against legislative infringement of those personal rights which form a precious part of the body of English liberties. In addition to these limitations, which are commonly found in a bill of rights, there is a regrettable tendency to place in constitutions innumerable provisions which relate neither to the organization of the state, nor express general principles in accordance with which the government shall be conducted. The effect is to embalm the desires of the moment, and withdraw a portion of the ordinary subject matter of legislation from the control of the legislature. Further restrictions are found in the provisions relating to the titles of statutes, the procedure in the enactment of laws, prohibitions upon special legislation and many others too numerous to mention at this time. Probably the most interesting and important provisions relate to powers prohibited to the legislature, and yet not legislated upon by the constituency when adopting the constitution.

For these we turn to the bill of rights, which forms a part of the constitution of Minnesota, and we find that it provides that the legislature shall not disfranchise or deprive any person of the rights or privileges secured to any citizen of the state, unless by the laws of the land or the judgment of his peers; compel anyone to be a witness against himself; authorize unreasonable searches and seizures of persons, houses, papers and effects; require a religious or a property test as a qualification for voting or

holding office; deprive any one of the right to a jury trial, as known at common law; or the right to think, speak and publish freely being responsible for the consequences therefor; authorize the taking, damaging, or destroying of private property for public use without just compensation, first made and secured; authorize imprisonment for debt; deny the right to give bail except for capital offences; require excessive bail, or impose excessive fines or cruel or unusual punishments; deny the right to a speedy trial when charged with crime, by a jury of the vicinage, with due notice of the charge, confrontation of witnesses, the assistance of counsel, and compulsory process for witnesses; permit a person to be placed twice in jeapordy of punishment; provide for a standing army in time of peace; place the military above the civil power; suspend the writ of habeas corpus save during rebellion or invasion; make treason consist of anything other than levying war against the state or in adhering to its enemies, giving them aid and comfort; provide that conviction for treason may be had unless on testimony of two witnesses to the same overt act, or confession in open court; pass any bill of attainder or ex post facto law, or any law impairing the obligation of contracts; provide that conviction for crime shall work corruption of blood or forfeiture of estate; hold any person to answer for a crime without due process of law; make the tenure of lands other than allodial; authorize leases and grants of agricultural land for a longer period of time than 21 years in which shall be reserved any rent or any service of any kind; or authorize money to be drawn from the state treasury for the benefit of any religious societies or theological seminaries or in any way interfere with religious freedom. These things may be done by the people by amendments of the constitution of the state, unless they are prohibited from doing so by the constitution of the United States. The legislature must

also act in the light of the declaration that "Every person is entitled to a certain remedy in the laws for all injuries and wrongs which he may receive in his person, property, or character. He ought to obtain justice freely and without purchase, completely and without denial, promptly and without delay, conformably to the laws."

After such an enumeration of prohibitions, it might seem that little is left for the states in the way of legislative power. And yet it is almost true, as some one has said, that "An American citizen may pass all his life without once having recourse to federal laws, or putting the power of the Union in motion." An acute French writer has said that "The states are the only constituencies in the Union which are created with general powers of government, and from which emanates as a whole, civil law, criminal law, industrial legislation, together with the officials and judges who put these laws in force. It is the constitution of the state alone of which the citizens feel the protective and repressive action at every turn. In the state constitutions we find the real ground work of the political institutions of America the key to the functions of the federal constitution, the explantion of its mysteries and the solution of its destiny."*

All matters regarding property and the personal relations of one individual to another are primarily under the control of the states. This includes local government through municipal or quasi municipal corporations, education, the elective franchise, practically all private corporations, marriage and divorce, the care and the protection of the poor and delinquent classes. It reaches every citizen through the wide and undefined police power, by virtue of which it enacts a variety of laws for the protection of the health, morals and general welfare of the public.

*Boutney, Studies in Const. Law, Page 71-2

It is the state that meets every child at his birth, goes with him through life and determines his right to a name, the care and support to which he is entitled from his parents, the education that he must receive, or that he may receive, regulates the trades or professions he may engage in, the manner in which he may perform his work, the number of hours he may work each day, the contracts he may make, and their validity, provides courts to determine his rights or settle his quarrels, requires him to serve on the jury or in the sheriff's posse, makes certain of his acts or omissions crimes, says when or how he may marry, protects his home, determines the titles of his property, and the way in which he may transfer it, makes him pay taxes, determines how he may be buried, and thereafter settles his estate and passes it on to his heirs.

I close this outline sketch of the relations and relative powers of the central and state governments by commending to you the wise words of Mr. Justice Harlan:* "So, a state may exert its power to strengthen the bonds of the Union and therefore, to that end, may encourage patriotism and love of country among its people. When, by its legislation, a state encourages a feeling of patriotism toward the nation, it necessarily encourages a like feeling toward the state. One who loves the Union will love the state in which he resides, and love both of the common country and the state will diminish in proportion as respect for the flag is weakened."

*Halter vs. Nebraska, 205 U. S. 34

STATE AND FEDERAL POLICE POWER

By Calvin L. Brown

My remarks on the subject assigned me will be quite general and with the view only of refreshing the mind respecting the scope of one of the great powers of the state, and the basis for the solution of many of the problems with which it is from time to time confronted. Time will not permit of a close discussion of the subject, and it is believed that a few general observations will answer the purposes intended by those who requested the paper.

The police power represents the authority possessed by the state, in its sovereign capacity, to enact and enforce such laws regulating the conduct and affairs of the citizen as are deemed reasonably necessary and expedient for the promotion of the health, morals, and general welfare of the people. It is essentially paternal and dates its origin with organized governments, though not until comparatively recent times has it been known under the name "police power." It is inherent in all civil governments, in fact the foundation of our whole social system, and its exercise does not depend upon either constitutional or statutory grant of power. In this country it is vested exclusively in the several states, except upon those subjects which are within the sole control of the federal government, of which interstate commerce is the most conspicuous example. Of the three great governmental powers,—taxation, eminent domain, and police power,—the last is by far the most autocratic, drastic, and far-reaching. It reaches out its strong hand and lays hold of many subjects for regulation and control. It is the foundation of all our penal laws and the pros-

ecution and punishment for crime; it sustains statutes regulating the manner of acquiring title to property, whereby the transfer, particularly of real property, is required to be made and recorded in the manner prescribed; it regulates the descent and distribution of the estates of deceased persons; it authorizes the discharge of debtors from their obligations through bankruptcy or insolvency proceedings, though their property surrendered for that purpose is wholly insufficient to discharge them in full; it controls with a firm hand the subject of marriage and divorce, and exercises a comprehensive grasp upon all domestic relations, prescribing rights, duties and obligations of husband and wife, parent and child, guardian and ward, master and servant; it authorizes compulsory education, and sanctions, in the interest of public health, the invasion by officials of the private home and the removal therefrom of an unfortunate member affected with a contagious disease and his confinement in a so-called pest house, and approves compulsory submission to vaccination to prevent the spread of small pox; it is the foundation of all judicial proceedings and the authority of the courts to compel obedience to their decrees; it interferes with the freedom of contract, sustains statutes against usury, and regulates and controls all forms of public service corporations. No authority, judicial or otherwise, ever has attempted to prescribe its limits or boundaries except in the general way of declaring that it extends to all matter of public regulation reasonably necessary for the public weal. Chief Justice Shaw, the great Massachusetts jurist, said: "It is much easier to perceive and realize the existence and source of the power than to mark its boundaries or prescribe limits to its exercise." Judge Bradley of the federal supreme bench remarked, and we find here about as accurate and comprehensive a definition as can be given, that "Whatever differences of opinion may exist as to the extent

and boundaries of the police power, and however difficult it may be to render a satisfactory definition of it, there seems to be no doubt that it extends to the protection of the lives, health and property of the citizen, and the promotion of good order and public morals." Blackstone defined it as the "due regulation and domestic order of the kingdom, whereby the inhabitants of a state, like the members of a well governed family, are bound to conform their general behavior to the rules of propriety, good neighborhood and good manners, and to be decent, industrious and inoffensive in their respective stations." Other definitions are found in the books, all reaching the same general conclusion that the police power is an attribute of sovereignty to be exercised upon all phases of human affairs whenever the interests of the public demand or require it.

It differs from the power of eminent domain in this, that by the exercise of that power private property is taken from the citizen without his consent and devoted to a public use, but the owner is entitled under the constitution to compensation for his loss or damage. In the exercise of the police power, though private property be taken or destroyed in the public interests, no compensation can be claimed by the owner. Every citizen holds and enjoys his property subject to such reasonable regulations and restrictions as an exercise of the police power may justify, and for the loss or destruction of private property in the exercise of the power the owner has no redress. This may be illustrated by reference to provisions of the law requiring the total destruction of diseased animals to the end that the disease, if contagious, may not spread and contaminate the animals of others, or that the carcass of the diseased animal may not reach the market as food. The remediless situation of the owner is also illustrated where a conflagration is raging in one of our large cities, which, if not checked, is likely

to spread and destroy large amounts of property. In such a case the police power sanctions the destruction of buildings in the path of the fire to the end that the conflagration may be brought under control. In neither of these cases is the owner entitled to compensation for his loss. The theory of the law is that benefits to the community at large are shared equally by the owner of the property so taken and he cannot complain. This may seem harsh to the property owner, in the case of the conflagration, for instance, for to him his property is with one arbitrary blow wrested from his possession and control that the property of others may be saved. But such is the police power.

It differs from taxation in the fact that the taxing power is exercised for the purpose of raising revenue for the support and maintenance of the government and its institutions and is subject to certain constitutional restrictions. It often happens that police regulations impose upon the citizen desiring to follow a particular occupation a license fee, illustrated by the saloon keeper's license, the hawker's, and peddler's, and other like callings, but this is not a tax, within the meaning of the law. The fee is imposed for the purpose of defraying the expense incident to enforcing the particular regulation, and does not therefore come within the constitutional restrictions on the subject of taxation. Where license fees or charges are imposed for the purpose of revenue the courts hold them invalid as unequal taxation and the police regulation falls. But unless the fees or charges imposed be out of all proportion to the expense incident to an enforcement of the regulations they are sustained.

In the early days in England, and for centuries, police legislation covered an exceedingly wide range and the acts of Parliament disclose the strong paternal character of the government as then existing. Many classes of citizens in those times were deprived of the right of con-

act by the scope and effect of express legislation. Dealings and transactions concerning articles of clothing and food were regulated and the value thereof prescribed by law, as well as the selling price for many other articles of personal property. Methods of manufacture were controlled, and the wages of laborers and artisans definitely scaled and fixed. These laws covered practically all subjects appropriate for contract in the ordinary affairs of life and the classes affected had no alternative but submission and were thus in effect denied that liberty and freedom of contract now so highly prized and carefully guarded and protected. Numerous enactments of like character are to be found in the early colonial days of this country. A statute of Massachusetts Bay defined the size of merchantable shingles, and regulated the time and place of sale, declaring that all shingles offered on the market which did not conform to the regulations should be forfeited to the poor. Another act defined the size, weight, and price of loaves of bread, with like penalty, forfeiture to the poor, of all bread not of standard size and weight. Another act, after reciting "that many persons are so extravagant in their expenses at taverns and other houses of common entertainment, that it greatly hurts their families and makes them less able to discharge their just debts," enacted, "that if any Innholder, Retailer, or Ale House Keeper, shall, after the publication of this act, trust or give credit to any person for more than ten shillings * * * such Innholder or Retailer * * * shall forfeit all such sums so trusted."

But legislation of this character, in the evolution of the times, has undergone a marked change. To-day, both in England and this country, the utmost liberty of contract is extended to the citizen, high or low, restricted only in the interest of humanity and the public good. The change was brought about in this country by the adoption of state and federal constitutions guaranteeing to

the citizen life, liberty, and the pursuit of happiness. The change did not, however, wholly suspend police legislation, and statutes intended to remedy wrongs, correct and prevent frauds and abuses of various sorts are found scattered all through the codes of the different states.

In more recent times the exercise of the power has been most strenuously contended against on the ground that particular regulations have so far invaded the natural or constitutional rights and liberties of the citizen as to be wholly void. Conspicuous examples of legislation of this nature are found in statutes concerning the rights and liabilities of employer and employee, and those regulating the conduct and affairs of corporations.

In a state of natural liberty, every person is permitted to act in harmony with his individual notions, provided he does not transgress those limits which are assigned to him by the law of nature. In a state of constitutional or civil liberty he is allowed to act according to his personal inclinations, provided he does not transgress those limits prescribed by municipal law enacted for the general welfare of society. Governments are made for the comfort of man and to afford him security in the enjoyment of life, liberty and property. And though many things permitted by natural liberty are prohibited by civil law, under the wise and just government, every citizen will gain greater liberty and society will be better protected by wholesome restrictions upon both natural and constitutional rights. Yet the police power is not omnipotent. It has its limitations, and constitutional or natural rights can be invaded only in the interests of the community at large.

It may be stated as a sound general proposition of constitutional law that the right of a person to engage in and pursue any lawful calling in a lawful way cannot be abridged by legislation. Yet this is not without its qualifications. The right does not extend to the pursuit

of professions or avocations of a nature requiring peculiar skill or knowledge, and in which the public have an interest. Many a life has been sent to its long home by the ignorance of the medical quack; property and liberty sacrificed by entrusting litigation to the unlearned and untrained lawyer; health impaired by the incompetent pharmacist, and various other injuries inflicted by the lack of knowledge, experience, and skill in the different occupations and professions. Legislation has taken note of this condition and limited the right to follow a particular profession, such as counsellor-at-law, physician and surgeon, pharmacist, and the like, to those whose qualifications fit them for the particular work.

The violent strife in recent years between employer and employee respecting the rights and obligations of each to the other has brought from the legislatures of many of the states numerous enactments designed to ameliorate the condition of the employee on the one hand and protect the property and property rights of the employer on the other. Public attention has been called repeatedly to the alleged wrongful and malicious conduct of employers in interfering with the free exercise of the will of the employee in pursuing his calling, particularly in efforts to prevent his from obtaining employment when and where he may, of which the system of blacklisting furnishes an illustration; and to the equally wrongful and unlawful conduct of employees in coercing employers by the boycott and other unlawful means. Statutes tending to remedy evils of this character have been sustained under the broad doctrine that it is a legitimate exercise of the power of legislation to prescribe rules defining and establishing distinctions respecting the rights, obligations, and duties of employers and employees as a class. Legislation of this character has, however, been fruitful of much litigation, and the courts are in violent conflict in their conclusions. In

Massachusetts, a statute forbidding the employer to withhold from his employee his wages for imperfections in his work, whether the same was authorized by contract or not, was held unconstitutional as invading the right of freedom of contract. Similar decisions were made in Pennsylvania and Illinois, though a contrary conclusion was reached in Indiana and other state courts, and perhaps in the federal supreme court. Statutes forbidding the employment of young children in factories are sustained by all the courts. Laws limiting the hours of labor have in some instances been sustained and in others held void. Such statutes, however, have been sustained uniformly when directed to common carriers, such as railroad and steamship companies. Where statutes are directed to and attempt to regulate the hours of labor or compensation in matters of private employment, a serious constitutional question is presented as to their validity. "But in so far as the question of controlling by law contract relations between employer and employee is removed from its relation to our own affairs, so that it becomes less and less influenced by our prejudices and self-interest, the contemplation of the social inequalities of life and the harsh, if not iniquitous oppression which is afforded by reason of these inequalities; when we see, more and more clearly each day, that the tendency of the present process of civilization is to concentrate social power into the hands of a few, who, unless restrained in some way, are able to dictate terms of employment to the masses, who must either accept them or remain idle; when at best they are barely enabled to provide for the more pressing wants of themselves and families, while their employers are, at least apparently, accumulating great wealth; when all this apparent injustice exists, or seems to, the impulse of a generous nature is to call loudly for the intervention of the law to protect the wage earner from the grasping cupidity of the em-

ployer." Yet from the viewpoint of legislative interference the assistance of the laborer is surrounded with grave constitutional questions. In England the settlement and adjustment of strikes and labor controversies is provided for by law. By Statute 30 and 31 Vict., Chap. 105, enacted in 1867, "equitable councils of conciliation" composed of delegates selected by masters and workingmen are empowered to settle and adjust all disputes and determine the rate of wages to be paid the workman. We have no such statute in this country, and whether the police power would sustain such legislation cannot be here determined, though it may be confessed and admitted that all our social affairs cannot be regulated nor all industrial controversies solved by legislative enactments.

Under the principle, first announced by Lord Chief Justice Hale over two hundred years ago, that private property devoted to a public use ceases for the time being to be private property, the legislative department of government has, under the police power, authority to regulate and control the affairs of all public service corporations, to prescribe compensation for services rendered, impose restrictions upon contracts to be entered into, create liability where otherwise none would exist, and all regulations in this respect, when not arbitrary or unreasonable, are valid and enforcible. Legislation along this line in the past few years has been directed more particularly to insurance and railroad corporations and has been the occasion of no inconsiderable strife in and out of our courts. In years gone by the insurance company prepared its own contract which the applicant for insurance was obliged to accept or go without indemnity. The contracts were skillfully drawn, and with an evident view to the protection of the company from liability, rather than the indemnity of the insured. As expressed by that eminent jurist, Justice Miller of

the supreme court of the United States, in a case on trial before him in this state, the company by the coarse print contained in its policy fully agreed and contracted to indemnify the insured in the event of the destruction of his property by fire and then deliberately "took it all back in that portion of the policy in fine print." He ruled in that case that the "coarse print" should prevail and judgment was awarded against the insurance company. Much injustice was perpetrated by those contracts, and the court reports are full of decisions exonerating the insurance company on technical grounds, based on the letter of the contract and on the theory of the law that the parties must be conclusively presumed to have contracted as disclosed by the written language of the policy. The legislature of this and other states finally took cognizance of the matter and enacted statutes prescribing a form of contract or policy to be used by all companies and forbidding the use of any other. This policy was plain and unambiguous and fully and completely expressed the rights and obligations of the respective parties. The authority of the legislature to enact such a law and to force upon the interested parties a contract prepared by the state was immediately brought before the courts by the insurance companies. It was urged not only that the freedom of contract was infringed, but that the parties were thereby denied the equal protection of the law. The legislation was sustained and the policy so framed by the statute is now the standard for all insurance contracts in this and other states.

Equally effective legislation has been upheld respecting railroad companies. The nature and character of their business, the methods of conducting it, the numerous hazards and risks connected with the operation of their roads, render the law applicable to the individual inappropriate and inefficient, and the lawmaking power has by methods of differentiation evolved new and appro-

priate rules for the determination of their obligations, rights and liabilities. They are required by law to maintain without compensation all necessary safety devices to prevent injuries to the traveling public; the speed of their trains may be regulated in villages and cities, and they may be required to stop all trains at particular stations. The general rule of the common law is that a master is not liable to his servant for injuries caused by the negligence of a fellow-servant, but the rule has been abrogated as to railroad companies, and legislation to that effect has been sustained. Freight and passenger rates may be fixed and prescribed by law, though on the theory that all police regulations must be reasonable, a prescribed rate which is confiscatory will not be sustained. The question of legislative rate making has been for the past few years conspicuously prominent and is now engaging the attention of the courts in suits brought to prevent the enforcement of rates recently made by this and other states. Prominent in this great contest is the present distinguished attorney general of our state, who follows me, and will undoubtedly enlighten you upon some phases of that subject.

Such is the police power and an incomplete outline of its scope. It is a prerogative of the legislative department of government, and the guiding star of its exercise has always been in this country the rule of right and wrong. Its proper use demonstrates the wisdom of its sweeping authority, for it preserves health, prevents frauds, trickery, and chicanery, elevates morals, maintains peace, and protects life, property and happiness. It can be delegated to municipal corporations, but can never be bargained or contracted away. The legislature, the agent of the sovereign people, can neither by affirmative action nor inaction divest itself of the right and duty to exercise the power whenever public interests may require. *Salus populi suprema lex.*

THE PRESENT PROBLEMS INVOLVED IN MINNESOTA'S STATEHOOD

By Edward T. Young

I have been asked to discuss the present problems involved in Minnesota's statehood. You have just listened to an exhaustive and scholarly address by Judge Elliott, on the subject of the structure of the American government, and to an equally meritorious discussion by Judge Brown of that great subject, the police power, and its distribution between the states and the nation.

Judge Elliott has shown that the term "government" as employed in this country means that complex system of public administration carried on by the simultaneous operation of the political machinery necessary to the making and enforcement of the laws of those primary republics which we call the states—the jurisdiction of each of which is limited to its own territory—and the corresponding political machinery of the federal republic, having jurisdiction throughout all the states as to the subjects specially enumerated and committed to it by the federal constitution. These two agencies operate at the same time in the same territory, and act directly on the same persons and property; they are each exercising a definite and limited part of the national sovereignty, and the two together constitute one government, the intention being that each should be supreme and exclusive within its sphere, and that all subjects of governmental cognizance should be within the jurisdiction of the one or the other. Ours is the only great government in which the sovereignty is divided and different portions thereof assigned to different governmental instrumen-

talities, and the surprising thing with reference to its operation in practice is, not that some conflict has arisen as to the true location of the jurisdictional boundary line between the two partial sovereignties, but that such an apparently impracticable plan of administration has not resulted in disruption.

Judge Brown has pointed out that the police power is indefinable. It is that inherent attribute of sovereignty which enables a government to do whatever may be necessary for the purpose of promoting the public welfare. When the federal constitution was framed the police power and all other latent and unenumerated powers were left with the states, and the federal government was endowed only with certain general enumerated powers which affected the welfare of the people of all the states alike; no federal power was intended to be left to implication, except such incidental powers as might be necessary to make those granted effectual. If the states and the federal government were distinct sovereignties, each would have inherent police power, but as they were formed to be co-ordinate parts of the government of one soverign people, the police power had to be definitely located in order to guard against conflict.

There is in this country at the present time, however, a school of federalist statesmen, among whom President Roosevelt is entitled to a front rank, who are and for some time have been demanding of the supreme court a new construction of the federal constitution, so as to hold, contrary to the well known and frequently expressed intention of its framers, that the federal government has latent powers as well as those enumerated, in the exercise of which it has authority to act in all matters affecting the public welfare, where in its opinion the states by reason of their limited jurisdiction are incompetent to handle the subject. In other words, the claim is being made that the fundamental plan of the fathers

should be so far changed by judicial construction as to invest the federal government with general police powers, the same as the states. There is a perceptible trend of public sentiment in favor of this so-called new federalism on the part of those who evidently have not studied the question closely enough to see the effect such a holding would have on our system of government. The most conservative student of public affairs must admit that the great material changes which have taken place in the country in the last century have produced conditions which make an enlargement of the federal power in certain directions not only desirable but necessary. The only legitimate room for controversy that exists as to that question, relates to the manner in which the change could be accomplished. The federal constitution was made by the people and not by the courts, and by its terms it provides a method whereby changes may be made by amendments to be adopted by the states. This method should be followed whenever changes are necessary, because in whatever respect the federal powers may be enlarged, the reserved powers of the states must be correspondingly diminished, and therefore the consent of the states should be obtained in accordance with the terms of the original compact. There is another fundamental objection to the enlargement of the federal power by judicial construction of the federal constitution, which does not question the integrity of the courts nor their capacity to know what the changes should be. It is the objection that such a usurpation of power would destroy that respect of the people for the courts and the constitution, which is necessary to our national repose. The province of judicial construction as to either a constitution or a statute has always been well understood to be limited to the determination of the true meaning of the framers thereof. The security of the people in their lives, liberties and property rights, has always

rested in the plainness of our laws and the certainty that the courts would interpret and enforce them according to their terms.

We have always aimed to make our laws so plain that every one could understand them, and because of their plainness, every citizen is presumed to know the law. If the courts may by "construction" make a constitution or law mean something different from what it says or what was intended by its framers, the power of self-government would be destroyed, and the courts justly the most respected branch of our government at present, would be converted from judicial tribunals into despotic lawmakers, and their decrees would receive about that same degree of respect which is generally accorded to despots.

But there is still a more vital objection to the theory of the advocates of the enlargement of federal power by judicial construction of the constitution. This divided sovereignty could not be continued, and this system of co-ordinate state and federal government maintained for a day, if both divisions of the government were exercising unenumerated powers. There would in such case be no possible way of determining which branch of the government had jurisdiction over any subject. The federal constitution would not enlighten us as to what subjects were within federal cognizance, and as that constitution very properly provides that where federal authority exists as to any subject, it is the "supreme law of the land," and state authority as to such subject must be regarded as inoperative, the effect of holding that the federal government might at its option assume control over any subject would be to entirely destroy the state governments. It is therefore clearly necessary that we either abolish the states and make of the general government a consolidated instead of a federal republic, or that in enlarging its powers we adhere to the original

plan of limiting federal authority to the exercise of powers specifically enumerated, and give it the needed enlarged scope by amendments which will clearly define the additional powers granted. If we adhere to this plan, the federal government can never have general police powers.

It is clear from what has been said that outside of purely local questions such as taxation or the development of our natural resources, the statehood of Minnesota presents only the same problems that confront the states generally.

One of the most difficult questions which the states at the present time have to handle arises out of the exercise of their police powers in the regulation of commerce.

Though ours is yet a new country the rapid development of our natural resources and the multiplication of our industrial undertakings have already made this the greatest commercial nation of the world. Minnesota has contributed its share to the country's commercial greatness, and has also contributed its share to the effort to solve some of the governmental problems to which these conditions have given rise.

At the foundation of commerce and all industrial life lies transportation, so that as a result of our commercial and industrial growth our railroad development has exceeded that of all other countries combined, and as a consequence we have been not only the most active, but the pioneers in the matter of the regulation of railroad rates.

The decision of the Granger Cases about thirty years ago by the federal supreme court settled the abstract question of the right of governmental regulation of railroads. By that decision the railroads were declared to be common carriers, subject to the obligations resting on such carriers under the common law; their roads were

declared to be public highways, and that it was obligatory upon them to furnish the public reasonable service at reasonable rates. But the settlement of these general principles was only a beginning in solving the problems involved. When, in the formation of our government, the sovereignty was divided, commerce was one of the subjects that was split, and jurisdiction was expressly given to the federal government over commerce beginning in one state and ending in another, and control was left in the states, over commerce beginning and ending within their respective borders. Exclusive control over interestate commerce is therefore exercised by the federal government under the constitutional grant of authority, and exclusive control over intra-state commerce is exercised by each of the states under its police power.

The great railroad lines have been constructed across the continent without regard to state lines. Each of these railroads is operated as a system, and its business, both passenger and freight, is managed from one central office. In forming its operating divisions no regard is paid to state boundaries, and on most of its trains and sometimes on every car of a train, both interstate and intra-state business are carried. There are therefore passenger and freight rates for the intra-state business of each of the states through which the road passes, subject to regulation by the respective states in which they begin and end; and also passenger and freight rates for the inter-state business carried by the same roads, subject to regulation by the federal government. While it is not necessary that they be identical for equal distances it is plain that there must be a fair and proper relation between the rates on each kind of commerce, otherwise one class of business would be unjustly compelled to bear a part of the burden properly belonging to the other. Each passenger and the shipper of each

kind of freight is entitled to a reasonable rate, and the railroad company on its part is entitled out of all its business to a fair income above the expense of operation and maintenance. If a state should prescribe rates so low that its intra-state business would be unprofitable to the company, it would have to refuse to put in the rate, or in order to protect itself from loss it would have to advance its inter-state rates. On the other hand if the interstate rates were made too low, the shippers of intra-state business on that line would have to pay unreasonable rates in order that the company might be able to show a profit at the end of the year. Each sovereignty must therefore jealously guard the rights of both the shippers and carriers under its jurisdiction. The courts have declared that each rate must be reasonable in and of itself, but this rule is easier to state than to apply. There are so many things to consider with reference to the reasonableness of each rate, that also must be considered with reference to all others, that the question seems almost inextricably involved in complications. Each rate ought to contribute its share to the general expense of operating the system of road, and the general profit of the enterprise. There are large and expensive terminals at commercial centers made necessary in part by intra-state business and in part by interstate traffic.

A part of the expense of the maintenance, and the income on the capital invested in these terminals, as well as a part of the general expenses of the entire system of road must be allotted to each kind of commerce in determining what the rates thereon should be. The character of the roadbed, the rails, the bridges, the number of engines and the volume of the general equipment, used indiscriminately in both kinds of commerce, must be taken into consideration, and their proportionate use in each kind of commerce be ascertained. The same train

and crew carrying intra-state business also carries business that is interstate, and the proportionate expense of such train service must be allotted before the true relation between the rates can be ascertained, or a rate be fixed on either kind of commerce which is reasonable in and of itself. Many of the same difficulties arise where we attempt to get at the separate expense of the passenger and freight business.

All of these perplexing problems do not grow out of the division of the jurisdiction over commerce between the states and the nation. They would have to be solved even if the federal government had complete control over the whole subject of commerce. Rates on a railway system are not and could not be made on a mileage basis from one end of the line to the other, except on through business. The great bulk of the business of a railroad is carried on local rates radiating from certain commercial centers, affected to some extent by local density of the traffic and competitive conditions. These difficult problems requiring an apportionment of the cost of the service between interstate and intra-state business, are but a part of the general question of the difference in cost between short haul and long haul business.

But in addition to all these questions, when a state undertakes to regulate rates on the intra-state business of an interstate carrier, there must be determined the extremely difficult question of the basis upon which the railroad is entitled to an income. Not only must the proportionate part of the gross value of the company's property which is devoted to its intra-state business be ascertained, but the question is yet to be decided how railroad property is to be valued for the purpose of income. Assuming all of the property of the company to be located in the state devoted exclusively to intra-state business, must the income of the company be predicated on the original cost of the construction of the road, or is

there some other element to be taken into account in determining the basis upon which income must be computed.

In the suits involving the regulation of rates now pending in this state, we contend that the proper basis of income is the amount of the original investment, while the railroad companies claim that the land used for their right of way, yards and terminals constantly increases in value the same as adjacent property, and that such increased value must be added to the original cost, and an income be allowed them on what they are pleased to call the present cost of reproduction of the road and its appurtenances. The affirmative or negative answer to the claim made by the state or to the claim made by the railroad company in this regard must depend on a determination of what is the true relation of a railroad to the state.

The claim of the railroad companies is based on the theory that a railroad is a private enterprise except to the extent that its property is devoted to a use in which the public have such an interest as to give it the right to fix minimum rates. The claim of the state is based on the theory that the business of a railroad is governmental in its character, and that in the performance of the business the railroad companies have no other or greater rights than the government would have had, had it undertaken the work itself. No one who has given the subject any thought can doubt that under their general power to construct highways, the several states might have constructed the railroads within their borders, and might have operated them for the common good of the people. The state alone possesses the power of eminent domain, whereby property may be taken against the will of the owner for highway or other public purposes. It would be an outrage on the right of private ownership of property, if the state should use that power

for any other purpose than for acquiring property strictly for the use of the public.

Instead of constructing the railroads themselves, the several states adopted the plan of creating these corporations known as railroad companies, and endowing them with this governmental power of eminent domain so as to enable them to acquire the right of way, yards and terminals necessary for their enterprises. The states did not intend to abuse this major power of sovereignty by so granting it to aid a private enterprise; on the contrary it was granted with the full understanding that the corporation receiving it was about to engage in the performance of a governmental function and would use this governmental power in furtherance thereof.

When property is acquired by the state for highway use it is entirely severed from the mass of business property, is unalienable for any purpose, and therefore has no market value. Speculation as to what its value might be if it were marketable would be a fruitless waste of time. In any inquiry as to the value of property in court, the market value is what is meant, so that if property is not and cannot become marketable there is no room for the inquiry. When any public service is carried on by the state or any of its political subdivisions for which a charge is made, the basis of the charge is the cost of the undertaking, and not a value theoretically enhanced by any subsequent speculative accretion representing no investment. On this subject Mr. Justice Brewer of the federal supreme court, in the recent case of Cotting vs. Goddard, 183 U. S. 79, in referring to the status of railroad companies says that when the owner of property intentionally devotes it to the discharge of a public service, thus deliberately undertaking to do that which is a proper work for the state, he should be assumed to have accepted all the conditions which attach to like service when performed by the state itself. Af-

ter referring to the grant of the power of eminent domain to such corporations he says:—

"It thus enables them to exercise the powers of the state, and exercising those powers, and doing the work of the state, is it wholly unfair to rule that they must submit to the same conditions which the state may place upon its own exercise of the same powers in the doing of the same work?"

In the rate cases now pending in this state the following concrete propositions are affirmed by the railroad companies, and the decision of the cases will involve their settlement, to wit:

1st. That the state wide reduction of intra-state rates, either by the railway commission or the legislature, operates in practice so as to compel a corresponding reduction in interstate rates of the carriers in the same and adjacent territory; and that inasmuch as interstate rates are within the exclusive jurisdiction of the federal government, any action of the state which would affect them is void. (If this theory should be upheld the state would have no power over rates of any kind.)

2nd. They correctly claim that it is more expensive to do the local short haul business within a state than it is to do the interstate business carried on the same train, which usually involves longer hauls, but they refuse to disclose the actual difference in the cost, based upon any method of definite computation. They also refuse to dislose the exact difference in cost between the passenger and freight business, or the actual rate basing value of the portion of their property which is employed in the domestic business of the state. They claim that no accurate figures can be given on either subject, and that therefore the rate making power must depend as to these questions on the opinion evidence of the company's expert witnesses. The state claims that these matters can be made definite

by a proper system of cost accounting.

3rd. That where rates are prescribed on a mileage basis for a whole state, if it is found that the rates are too low and therefore confiscatory as to any road, the rates are void as to all, even though some of the roads by reason of the favorable location of their lines and the volume of their business and the economy of their management, might be able to make more than a reasonable profit on the rates. The state claims that each road must be considered separately and the rates must stand or fall accordingly.

4th. They also claim that they are entitled to an income on the present cost of reproducing their lines in the state; that the cost of right of way and terminals, including the damages to adjacent lands, is ordinarily about three times as much as the same quantity of land would cost for ordinary business purposes, and that therefore they are entitled to take treble the value of an equal amount of adjacent lands as the present value of theirs. It is on this theory of valuation that they claim the rates are so low that the companies cannot earn a reasonable income under them.

Many of these questions have never been squarely presented to the federal court, and until they are judicially determined the subject of rate regulations will be surrounded by uncertainties.

In the famous Nebraska Rate Case, reported as "Smythe v. Ames," 169 U. S. 466, speaking of the basis of railroad income, Mr. Justice Harlan said:—

"We hold, however, that the basis of all calculations as to the reasonableness of rates to be charged by a corporation maintaining a highway under legislative sanction must be the fair value of the property being used by it for the convenience of the public. And in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the

amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of property. What the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience. On the other hand, what the public is entitled to demand is that no more be exacted from it for the use of the public highway than the services rendered by it are reasonably worth."

When these fundamental questions have been settled there will be little difficulty in determining what is a fair rate in any given case, and it is needless to say that in adjusting those questions the public should be actuated by a spirit of the utmost fairness, and should respect to the fullest extent the rights of property involved. In fixing rates the state must stop safely short of confiscation.

In this state we are particularly interested in the speedy restoration—if I may use that phrase—of friendly relations between the state government and the railroads. We feel that the state is asking for nothing as against the railway companies, but what is clearly fair and just, and so far as the state and the railways are unable to agree on the important basic questions involved, we desire a speedy judicial determination which will remove all danger of conflict in the future. In the matter of railroad regulation it is highly important that there should be entire harmony so far as is possible, between the officers of the state and the railroad companies. We believe that it is by friendly co-operation, rather than by conflict between the state and the trans-

portation companies, that the public welfare in this rich and growing state can be advanced, and we therefore hope, with these very important questions now involved in pending litigation settled, that in their future relations the spirit of fairness will be manifested both on the side of the state and that of the railroad companies, and that with industrial peace established on a permanent basis, the people of the state may all unite in developing our great resources and in making this state one of the richest and most prosperous states of the Union.

Second Session

MINNESOTA'S HERITAGE

THE GEOLOGICAL AND GEOGRAPHICAL STRUCTURE OF MINNESOTA

By Warren Upham

This state occupies the center of the stage in the grand drama of the development of North America. Surrounded by her sister states and provinces, our commonwealth lies at the center of the continent.

Geographical Features

Area

Minnesota comprises 84,286.53 square miles, or 53,943,379 acres, as measured on the plats of the United States land surveys. About one-fifteenth of this area is occupied by the abundant lakes and rivers, covering 5,637.53 square miles, or 3,608,012 acres; but no part of Lake Superior, adjoining the state on the northeast, is included in this measurement. Prof. C. W. Hall, in his admirable text-book, Geography of Minnesota, published in 1903, remarks that the land area of this state, 50,335,367 acres, would make 314,596 farms containing 160 acres each. The length of the state from north to south is 380 miles, excepting the small tract west of the Lake of the Woods and north of the 49th parallel. Its greatest width, near its northern boundary, measured from Pigeon Point on Lake Superior west to the Red river, is

346 miles; and its least width, from the mouth of the St. Croix river, west to the boundary between Minnesota and South Dakota, is 178 miles.

Altitude

The average altitude of Minnesota above the level of the sea is stated by Hall as about 1,200 feet, half of the area being above and half below that height.

If we consider the form of the entire continent of North America, it is seen to include on the east and west two mountainous regions, or belts, and between them a comparatively flat and low expanse. Near the middle of the vast interior expanse lies the state of Minnesota. The lowest land of this state is the shore of Lake Superior, 602 feet above the mean tide sea level, with yearly fluctuations of one or two feet above and below that mean level of the lake. Its highest elevations are found along the Mesabi range and the Giant's range, culminating at the tops of the Misquah hills, in the vicinity of Winchell lake, near the center of Cook county and forty-five to fifty miles west of Pigeon Point, which rise about 1,630 feet above Lake Superior, or 2,230 feet above the sea.

General Contour

The topographic features of Minnesota may be briefly summed up for its western three-quarters as being a moderately undulating, sometimes nearly flat, but occasionally hilly area, gradually descending from the Coteau des Prairies and from the Leaf hills, respectively about 2,000 and 1,700 feet above the sea, to half that height, or from 1,000 to 800 feet, in the long, flat basin of the Red river valley, and to the same height along the valley of the Mississippi from St. Cloud to Minneapolis.

Exceptions to the prevailing undulating or rolling and rarely hilly contour are the southeast part of the state,

where the Mississippi river and its tributaries are inclosed by bluffs from 200 to 600 feet high, and the northwest coast of Lake Superior and the part of the state lying north of this lake and east of Vermilion lake. A very bold rocky highland rises 400 to 800 feet above Lake Superior within one to five miles back from its shore along all the distance of 150 miles from Duluth to Pigeon Point, the most eastern extremity of Minnesota; while farther north are many hill ranges, seldom worthy to be called mountains, 200 to 800 feet higher, mostly trending from northeast to southwest, or from east to west.

Lakes and Streams

The upper Mississippi river drains an area of about 47,000 square miles in Minnesota, or more than half of this state. In its southwest corner about 1,500 square miles send their drainage by the Big Sioux and Little Sioux rivers to the Missouri, being thus tributary to the lower Mississippi. In the northeastern part of Minnesota the St. Louis river and smaller streams flowing into Lake Superior, and so tributary to the St. Lawrence river, drain an area of about 7,700 square miles.

Last, in northern and northwestern Minnesota, the basin of the Rainy river comprises about 9,700 square miles, and that of the Red river about 18,300 square miles, making together 28,000 square miles in this state tributary to Lake Winnipeg and through the Nelson river to Hudson bay.

The great Lake Superior, and Rainy lake and the Lake of the Woods on our northern boundary, belong partly to Minnesota. Included entirely within our area, Red lake, the largest lying in any single state of the Union, has an extent of about 440 square miles, or somewhat more than several of our smaller counties. Next in size, among the myriad lakes in this state, are Mille

Lacs, having an area of almost exactly 200 square miles, and Leech lake and Lake Winnebagoshish, each almost as large.

It is estimated that. in total, Minnesota contains 10,000 lakes and lakelets. Most of them lie in hollows of the glacial and modified drift; and they are absent, or very infrequent, outside the drift moraines, in the southeast and southwest corners of the state. In its northeast part, north of Lake Superior, where the drift on some extensive areas was deposited only in scanty amount, many of the lakes occupy rock basins.

Lake Itasca, the head of the Mississippi, is about 1,460 feet above the sea. This river, in its ordinary stage of water, at Brainerd, is 1,150 feet above the sea level; at St. Cloud, 975 feet; at Minneapolis, above St. Anthony falls, 800 feet; a mile below the falls, 720 feet; at Fort Snelling, 690 feet; at St. Paul, 685 feet; in Lake Pepin, 664 feet; at Winona, 640 feet; and at the southeast corner of the state, 620 feet.

Minnesota, like all the other states adjoining the Mississippi, excepting Louisiana, receives its name from a large river. As in Wisconsin and Illinois, the Minnesota is the largest river lying wholly or mostly in the state named for it. Only its head streams and sources above Big Stone lake are outside of Minnesota, being in the northeast corner of South Dakota. This Sioux name Minnesota means whitish water, or, as may be said poetically, "sky-tinted water," in allusion to the whitishly turbid color of the river in stages of flood. It has a length of about 300 miles, and its basin measures a little over 16,000 square miles. From Big Stone lake, through which this river flows on the west line of Minnesota, it has a descent of 272 feet to its mouth at Fort Snelling, where its junction with the Mississippi at the ordinary stage of low water is 690 feet above the sea.

All the creeks and rivers of this state, meandering

through its northern woods, and traversing its great southern and western prairie region, were routes of travel for the aboriginal red men, and for the early white explorers and fur traders. Their graceful birch canoes passed along these almost countless streams, and across the thousands of beautiful lakes, as the chief means of travel and commerce, during nearly two hundred years from the time of the first coming of white men.

Where the streams are broken by rapids or falls, the canoe and its freight were portaged past the obstruction; and the headwaters or branches of each river system were connected with those of others by portage paths. Throughout the gently undulating region, adjacent drainage areas are in many places separated by scarcely perceptible heights of watershed.

On the most western of the aboriginal routes of canoe traffic in Minnesota, at Brown's Valley, where a great channel was cut during the closing part of the Ice Age, between Lake Traverse, outflowing north to the Red river, and Big Stone lake, flowing southward by the Minnesota river, the canoes could sometimes be floated in rainy seasons across a watershed separating the greatest drainage basins of the continent.

Geologic History

The following very concise sketch of the history of this state during the vast geologic ages is based on the publications of the Minnesota Geological Survey, from 1872 to 1901, comprising twenty-four annual reports and six quarto volumes of final reports. This Survey, occupying thirty years, was under the continuous direction of Prof. N. H. Winchell as state geologist, with whom the present writer was for a large part of that time an assistant.

The Archean Era

Granite, syenite, greenstone, gneiss, and schists, belonging to the Archean or Beginning era, reach on the northern boundary of Minnesota from Gunflint and Saganaga lakes west to the Lake of the Woods. They thence extend south upon a large part of St. Louis and Itasca counties to the Vermilion and Mesaba ranges, famed for their immense deposits of iron ore.

A narrow Archean belt continues from this great area southwesterly through Cass county, mostly covered by the glacial drift, and expands into a second large area of these rocks, reaching from Todd, Morrison and Stearns counties northeast to Carlton county and south to New Ulm. The extensive quarries near St. Cloud and Sauk Rapids are in this area.

The same rocks also underlie a large district west of New Ulm, extending to the western boundary of Minnesota, mainly covered by Cretaceous beds and glacial drift. In that part of the Minnesota river valley, channeled about 150 feet below the general level of the country, the Archean granites and gneisses are seen in many and extensive outcrops, and have been much quarried at Ortonville, near the mouth of Big Stone lake.

Archean time, during which these oldest rocks were formed, was exceedingly long, perhaps equalling all the later eras. Its early part may be termed azoic, from the absence of any evidences that the earth or the sea then had either plant or animal life.

Paleozoic Time

Next after the Archean was a very long era characterized by ancient types of life, as its name Paleozoic signifies.

In the northeast part of Minnesota, adjoining Lake Superior, early Paleozoic rocks, comprising gabbro,

slates, quartzites, and conglomerates, occupy nearly all of Cook and Lake counties, the southeast part of St. Louis county, and eastern Carlton county. Westward these rocks are thought to underlie the glacial and modified drift on a wide belt reaching to the lower part of Crow Wing river. They are called the Taconic series by Professor Winchell, who regards them as equivalent with the Lower Cambrian strata, and probably also partly the Middle Cambrian, of other states and countries.

In southwestern Minnesota a great quartzite formation of the Taconic period has limited outcrops in Brown, Watonwan, Cottonwood, Pipestone, and Rock counties, where it doubtless occupies large areas beneath the drift.

Advancing upward in the succession of rock strata, and onward in the Paleozoic era, we have in the southeast part of this state, from Pine county south to the Iowa line, and reaching east into Wisconsin, a great series of Upper Cambrian sandstones, limestones, and shales. Unlike the preceding Taconic strata, which are mostly much tilted or folded, the Upper Cambrian and higher formations in this state are nearly horizontal strata, having been only very slightly disturbed or changed from their original condition as marine sediments.

Another and similar series, of Lower Silurian age, chiefly limestones and shales, lies next higher in the vicinity of St. Paul and Minneapolis, and has a large development thence southward, flanked on each side by the Cambrian formations.

Latest of the Paleozoic strata in Minnesota are scanty Devonian limestones, shales, and sandstones, observed in Mower county and continuing into Iowa.

In the Upper Cambrian series, sandstone is extensively quarried at Hinckley and Sandstone, in Pine county, and limestone at Kasota and Mankato, in the Minnesota valley. Quarries of smaller extent are also worked at

many other places in both the Upper Cambrian and Lower Silurian series.

This region has no Carboniferous nor Permian strata, belonging to the closing periods of Paleozoic time. If any sediments were then laid down here, they have since been eroded and removed during long ensuing ages, when the state was a land surface. Probably it stood above the sea, receiving no marine nor estuarine deposits, but undergoing slow erosion by rains, rills, and rivers, bearing sediments away, during the Carboniferous period and onward until the Cretaceous period.

Mesozoic Time

Through the early and greater part of the Mesozoic era, so named for its intermediate types of plants and animals, Minnesota appears to have been a land area, receiving therefore no additions to its rock formations. The floras and faunas of this time were gradually changing from their primitive and ancient characters, called Paleozoic, but had not yet attained to the relatively modern or new forms which gave the name Cenozoic to the next era.

Toward the end of the Cretaceous period, in late Mesozoic time, this area was again mostly depressed beneath the sea. Frequent outcrops of Cretaceous shales and sandstone, continuous from their great expanse on the western plains, occur in some parts of central and southern Minnesota; and in numerous other places deep wells, after passing through the thick covering of glacial drift, encounter these Cretaceous strata, which sometimes are found to reach to a thickness of several hundred feet. Further evidence of the eastward extension of the Cretaceous sea upon this state is afforded in its northern part by Horace V. Winchell's discoveries of Cretaceous shales in place on the Little Fork of the Rainy river and on the high Mesaba iron range.

During the following Cenozoic era, when this was a land region subjected to erosion, its Cretaceous deposits were largely carried away; but a remaining portion, in some tracts having considerable depth, probably still lies beneath the drift on the greater part of the western four-fifths of Minnesota. Concerning its eastern limit, Prof. N. H. Winchell writes: "A line drawn from the west end of Hunter's Island, on the Canadian boundary line, southward to Minneapolis, and thence southeastwardly through Rochester .to the Iowa line, would, in general, separate that part of the state in which the Cretaceous is not known to exist from that in which it does. It is not here intended to convey the idea that the whole state west of this line is spread over with the Cretaceous, because there are many places where the drift lies directly on the Silurian or earlier rocks; but throughout this part of the state the Cretaceous exists at least in patches, and perhaps once existed continuously."

Cenozoic Time

Ever since the uplift of Minnesota from the Cretaceous sea, it has stood above the sea level and has received no marine sediments. It was instead being slowly sculptured by rains and streams through the long periods of the Tertiary era, and during a part of the relatively short Quaternary era it was deeply covered by snow and ice similar to the ice-sheets that now envelope the interior of Greenland and the Antartic continent.

These two eras, or principal divisions of geologic history, may be here classed together as a single Cenozoic era, distinguished by the evolutionary creation of new and present types of life. Nearly all the plants and animals of the preceding eras have disappeared, as also many that lived in the early Cenozoic periods, while new spe-

cies succeeding them make up the present floras and faunas.

The creation of man, his dispersion over the earth, and his development in the white, black, yellow, and red races, took place during the later part of Cenozoic time, which is often called the Pleistocene (meaning the newest) period or the Quaternary era. Finally the dominance of mankind in the history of the earth, with utilization of its vast natural resources, forms another grand time division which has been called the Psychozoic era, distinguished by the higher life and dominion of the mind or soul. Thus the Tertiary, Quaternary, and Psychozoic divisions of time are successive parts of the Cenozoic era, continuing to the present day.

The Ice Age

The last among the completed periods of geology was the Ice Age, most marvelous in its strange contrast with the present time, and also unlike any other period during the almost inconceivably long, uniformly warm or temperate eras which had preceded. The northern half of North America and northern Europe then became enveloped with thick sheets of snow and ice, probably caused chiefly by uplifts of the land as extensive high plateaus, receiving snowfall throughout the year. But in other parts of the world, and especially in its lower temperate and tropical regions, all the climatic conditions were doubtless then nearly as now, permitting plants and animals to survive and flourish until the departure of the ice-sheets gave them again opportunity to spread over the northern lands.

High preglacial elevation of the drift-bearing regions is known by the depths of fjords and submerged continuations of river valleys, which on the Atlantic, Arctic, and Pacific coasts of the north part of North America show the land to have been elevated at least 2,000 to

3,000 feet higher than now. In Norway the bottom of the Sogne fjord, the longest and deepest of the many fjords of that coast, is 4,000 feet below the sea level. Previous to the Glacial period or Ice Age, and doubtless causing its abundant snowfall, so high uplift of these countries had taken place that streams flowed along the bottoms of the fjords, channelling them as very deep gorges on the borders of the land areas.

Under the vast weight of the ice-sheets, however, the lands sank to their present level or mostly somewhat lower, whereby the temperate climate, with hot summers, properly belonging to the southern portions of the ice-clad regions, was restored. The ice-sheets were then rapidly melted away, though with numerous pauses or sometimes slight readvances of the mainly receding glacial boundary.

Nearly all of Minnesota is overspread by the glacial drift, the only exception being a relatively narrow unglaciated area bordering the Mississippi river from Lake Pepin southward and extending into Wisconsin and Iowa. North of Lake Superior the drift on some tracts is thin, and its average depth there probably does not exceed 50 feet. On the western four-fifths of the state it averages from 100 to 150 feet in thickness, almost everywhere concealing the bed rocks, which generally had been subaerially eroded in preglacial time to an approximately flat or only moderately hilly surface.

Small knobs and hillocks of rock, which had been spared by the preglacial erosion were worn down and leveled by the ice-sheet in its very slow southward movement, and its drift was filled into the preglacial valleys, so that the contour of the drift-enveloped country is now mainly more uniform than it was before the Ice age.

On certain belts the drift was left in hills and ridges, accumulating during the closing stage of the Glacial period along the margin of the ice wherever it halted in

its general retreat or temporarily readvanced. Upon the greater part of Minnesota the only hills are formed of this morainic drift, ranging in height commonly from 25 to 75 or 100 feet, but occasionally attaining much greater altitude, as in the Leaf hills of Otter Tail county, which rise from 100 to 350 feet above the moderately undulating country on each side.

Unstratified glacial drift, called till or boulder clay, which was laid down by the ice-sheet without modification by water transportation, assorting, and deposition in beds, forms the surface of probably two-thirds, or a larger part, of Minnesota. It consists of boulders, gravel, sand, and clay, mingled indiscriminately together in a very hard and compact formation, which therefore is frequently called "hardpan." The boulders of the till are usually so plentiful that they are sprinkled somewhat numerously on its surface; yet they are seldom more, on the large portions of the country which are adapted for agriculture, than the farmer needs to use, after clearing them from his fields, for the foundations of buildings and for walling up his cellar and well. They are rarely abundant enough to make walls for the inclosure of the fields, as in New England.

The moraine belts of knolly and hilly till have far more abundant boulders than are found on its more extensive, comparatively smooth tracts. Wherever the vicissitudes of the wavering climate caused the chiefly waning border of the ice-sheet to remain nearly stationary during several years, the outflow toward the melting steep frontal slope brought much drift which had been contained in the lower part of the ice, heaping it finally in hills and ridges along the ice margin. Twelve of these marginal belts of drift knolls and hills have been traced in irregular looped courses across Minnesota, as described and mapped in the reports of this state; and west of the Red River Valley these knolly drift belts continue through the north-

eastern half of North Dakota, and onward across the international boundary.

About a third part of the entire mantle of drift consists of the deposits called modified drift, being water-worn and stratified gravel, sand, and clay or silt, which were washed away from the drift upon and beneath the retreating ice-sheet by the streams due to its melting and to accompanying rains. Hillocks and ridges of gravel and sand (called kames and eskers), sand plateaus and plains, and the valley drift (varying from very coarse gravel to very fine clay, often eroded so that its remnants form terraces), are the principal phases of the modified drift. In being derived directly from the ice-sheet, these deposits had the same origin as the glacial drift forming the common till and the greater part of the marginal moraines; but they were modified, large boulders being not included, while the gravel and finer portions were brought, further pulverized or rounded, and assorted in layers, by water.

Glacial Lake Agassiz

When the departing ice-sheet, in its melting off the land from south to north, receded beyond the watershed dividing the basin of the Minnesota river from that of the Red river, a lake, fed by the glacial melting, stood at the foot of the ice fields, and extended northward as they withdrew along the valley of the Red river to Lake Winnipeg, filling this broad valley to the height of the lowest point over which an outlet could be found. Until the ice barrier was melted on the area now crossed by the Nelson river, thereby draining this glacial lake, its outlet was along the present course of the Minnesota river. At first its overflow was on the nearly level undulating surface of the drift, 1,100 to 1,125 feet above the sea, at the west side of Traverse and Big Stone counties; but in process of time this cut a channel there, called Brown's

Valley, 100 to 150 feet deep and about a mile wide, the highest point of which, on the present water divide between the Mississippi and Nelson basins is 975 feet above the sea level. From this outlet the valley plain of the Red river extends 315 miles north to Lake Winnipeg, which is 710 feet above the sea. Along this entire distance there is a very uniform continuous descent of a little less than one foot per mile.

The farmers and other residents of this fertile plain are well aware that they live on the area once occupied by a great lake, for its beaches, having the form of smoothly rounded ridges of gravel and sand, a few feet high, with a width of several rods, are observable extending horizontally long distances upon each of the slopes which rise east and west of the valley plain. Hundreds of farmers have located their buildings on these beach ridges as the most dry and sightly spots on their land, affording opportunity for perfectly drained cellars even in the most wet spring seasons, and also yielding to wells, dug through this sand and gravel, better water than is usually obtainable in wells on the adjacent clay areas. While each of these farmers, in fact every one living in the Red River Valley, recognizes that it is an old lake bed, few probably know that it has become for this reason a district of special interest to geologists, who have traced and mapped its upper shore along a distance of about 800 miles.

Numerous explorers of this region, from Long and Keating in 1823, to General G. K. Warren in 1868 and Professor N. H. Winchell in 1872, recognized the lacustrine features of this valley; and the last named geologist first gave what is now generally accepted as the true explanation of the lake's existence, namely, that it was produced in the closing stage of the Glacial period by the dam of the continental ice-sheet at the time of its final melting away. As the border of the ice-sheet re-

treated northward along the Red River Valley, drainage from that area could not flow as now freely to the north through Lake Winnipeg and into the ocean at Hudson bay, but was turned by the ice barrier to the south across the lowest place on the watershed, which was found, as before noted, at Brown's Valley, on the west boundary of Minnesota.

Detailed exploration of the shore lines and area of this lake was begun by the present writer for the Minnesota Geological Survey in the years 1879 to 1881. In subsequent years I was employed also in tracing the lake shores through North Dakota for the United States Geological Survey, and through southern Manitoba, to the distance of a hundred miles north from the international boundary, for the Geological Survey of Canada. For the last named survey, also, Mr. J. B. Tyrrell extended the exploration of the shore lines more or less completely about two hundred miles farther north, along the Riding and Duck mountains and the Porcupine and Pasquia hills, west of lakes Manitoba and Winnipegosis, to the Saskatchewan river.

This glacial lake was named by the present writer in the eighth annual report of the Minnesota Geological Survey, for the year 1879, in honor of Louis Agassiz, the first prominent advocate of the theory of the formation of the drift by land ice. Its outflowing river, whose channel is now occupied by lakes Traverse and Big Stone and Brown's Valley, was also named by me, in a paper read before the American Association for the Advancement of Science at its Minneapolis meeting in 1883, as the River Warren, in commemoration of General Warren's admirable work in the United States Engineering Corps, in publishing maps and reports of the Minnesota and Mississippi river surveys. Descriptions of Lake Agassiz and the River Warren were somewhat fully given in the eighth and eleventh annual reports of the

Minnesota Geological Survey, and in the first, second, and fourth volumes of its final report; and more complete descriptions and maps of the whole lake, in Minnesota, North Dakota, and Manitoba, were published in 1895 as Monograph XXV of the United States Geological Survey.

Several successive levels of lake Agassiz are recorded by distinct and approximately parallel beaches of gravel and sand, due to the gradual lowering of the outlet by the erosion of the channel at Brown's Valley, and these are named principally from stations on the Breckenridge and Wahpeton line of the Great Northern railway, in their descending order, the Herman, Norcross, Tintah, Campbell, and McCauleyville beaches, because they pass through or near these stations and towns. The highest or Herman beach is traced in Minnesota from the northern end of Lake Traverse eastward to Herman, and thence northward, passing a few miles east of Barnesville, through Muskoda, on the Northern Pacific railway, and around the west and north sides of Maple lake, which lies about twenty miles east-southeast of Crookston, beyond which it goes eastward to the south side of Red and Rainy lakes. In North Dakota the Herman shore lies about four miles west of Wheatland, on the Northern Pacific railway, and the same distance west of Larimore, on the Pacific line of the Great Northern railway. On the international boundary, in passing from North Dakota into Manitoba, this shore coincides with the escarpment or front of the Pembina Mountain plateau; and beyond passes northwest to Brandon on the Assiniboine, and thence northeast to the Riding mountain.

Leveling along this highest beach shows that Lake Agassiz, in its earliest and highest stage, was nearly 200 feet deep above Moorhead and Fargo; a little more than 300 feet deep above Grank Forks and Crookston; about 450 feet above Pembina, St. Vincent, and Emerson; and

about 500 feet and 600 feet, respectively, above lakes Manitoba and Winnipeg. The length of Lake Agassiz is estimated to have been nearly 700 miles, and its area not less than 110,000 square miles, exceeding the combined areas of the five great lakes tributary to the St. Lawrence.

After the ice border was so far melted back as to give outlets northeastward lower than the River Warren, numerous other beaches marking these lower levels of the glacial lake were formed; and finally, by the full departure of the ice, Lake Agassiz was drained away to its present representative, Lake Winnipeg.

While the outflow passed southward, seventeen successive shore lines, marked by distinct beach ridges, were made by the gradually falling northern part of this lake; but all these, when traced southward, are united into the five beaches before noted for the southern part of the lake. During its stages of northeastern outflow, a lower series of fourteen shore lines was made. Thus Lake Agassiz had, in total, thirty-one successive stages of gradual decline in height and decrease in area.

The earliest Herman beach has a northward ascent of about a foot per mile, but the lowest and latest beaches differ only very slightly from perfect horizontality. It is thus known that a moderate uplift of this area, increasing in amount from south to north, was in progress and was nearly or quite completed while the ice-sheet was melting away. Before the Glacial period, all the northern half of our continent had been greatly elevated, producing at last the cold and snowy climate and the thick ice-sheet; in a late part of that period the land was depressed under the weight of the ice, which in consequence melted away; and latest, at the same time with the departure of the ice-sheet, the unburdened land rose a few hundred feet, the uplift having a gradual increase

toward the central part of the country formerly ice-covered.

In comparison with the immensely long and ancient periods that had preceded, the final melting of the ice-sheet, the deposition of its marginal moraines and other drift formations, its fringing glacial lakes, and the attendant uplifting of the land, occupied a geologically short time and were very recent. The entire duration of Lake Agassiz, estimated from the amount of its wave action in erosion and in the accumulation of beach gravel and sand, appears to have been only about 1,000 years. From a wide range of concurrent but independent testimonies, we may accept it as practically demonstrated that the period since the ice-sheets disappeared from North America and Europe, and also since Lake Agassiz existed in the Red River Valley, measures some 6,000 to 10,000 years. Within this period are comprised the successive stages of man's development of the arts, from the time, in the late part of the Ice age, when his best implements were polished stone, through ages of bronze, iron, and finally steel, to the present time, when steel, steam, and electricity bring all nations into close alliance.

THE WEALTH OF MINNESOTA

By Edward Van Dyke Robinson

In view of the detailed papers which are to follow relating to various interests and aspects of Minnesota, the present paper will be in the nature of a brief general survey of the field, partly historical and partly statistical in character. Indeed, the limitation of time alone would prevent an adequate discussion of the many questions involved in "The Wealth of Minnesota."

Minnesota measures approximately 405 by 354 miles. It extends from about the latitude of Paris to that of Marseilles; its width equals the distance from Paris to Strassburg; and its area (84,682 sq. miles)* falls but little short of the combined area of England, Wales and Scotland.

The population of Minnesota according to the state census of 1905 was 1,979,912 or 25 per square mile of the land area. For comparison, it may be mentioned that the United States had 26 per square mile in 1900. This appears to be a sparse population, compared with the overcrowded countries of Europe, or even with certain of the older states of the Union. The fact is, however, that the state is so large and its several sections differ so greatly in the matter of population, that an average per square mile for the whole state fails to tell the truth regarding any part of it. Thus the southern counties, settled some 50 years ago, are approaching or have already reached the maximum which they can sustain (without a lowering of the standard of living), on the

*Inclusive of an estimated water surface of 3,824 sq. mi. (Bull. 302, U. S. Geol. Survey.)

basis of present methods of using the soil; and some of them have even begun to lose population, owing to the lure of cheaper lands elsewhere. On the other hand, the northwestern prairie district in the Red River Valley, which was more recently settled, is still increasing in population; and the northern half of the state, originally timbered but now mostly cut over or burned over, contains vast regions where settlers are few and far between, and frontier conditions of life still prevail. In fact, not a little of this section away from the mineral ranges is still a wilderness lying beyond the outermost limits of agricultural settlement.

The first white men in Minnesota were Frenchmen, who came by way of the Great Lakes, (1659); and their motive was the fur-trade. Ten years before the Declaration of American Independence, there was a considerable settlement at Grand Portage, 146 miles from Duluth, where the canoe route from Montreal left Lake Superior for the Rainy River, Lake Winnipeg, and Great Slave Lake. Another early center of the fur-trade was at La Pointe, on Madeleine Island, near Ashland, Wis., which was for many years (after 1816) the seat of the Astor interests in the Northwest, and had intimate relations with Minnesota by way of the St. Croix river. The first settlers on the upper Mississippi were also connected with the fur-trade. In this class belong not a few men prominent in early Minnesota, notably N. W. Kittson, Henry M. Rice, Charles W. Borup, William and Allan Morrison, and H. H. Sibley. And the importance of the fur trade was further enhanced when the Red River carts established connection (1843) between the Hudson Bay Company's factory at Winnipeg and St. Paul. These facts of history, taken in conjunction with the large areas of sparsely settled woodlands in Minnesota, serve to explain why St. Paul is still the greatest primary fur mar-

ket in the United States, and one of the greatest centers of fur manufacture.

The second economic motive which brought men to Minnesota was the lumber industry. Most of the early lumbermen were recruited from the lumber districts of Maine, and they transferred to Minnesota the lumbering methods which had been developed in northern New England. The first logs were cut for market on the St. Croix in the winter of 1836-37; and just ten years later, lumbering began on the Rum River, a tributary of the upper Mississippi. Mills were soon built at the falls of these rivers, and immense quantities of logs were also rafted down the river as far as St. Louis. At Moline, Rock Island and other river towns, mills were built especially to saw logs from the St. Croix. The lumber industry in fact brought to Minnesota most of the people, aside from those connected with the fur-trade, who were here in territorial days. Minnesota lumber not only built up many towns on the Mississippi and its tributaries, but by reason of its cheapness and accessibility, it was a powerful factor in the rapid settlement and development of the prairie regions to the south and west.

Agriculture began late and under unfavorable auspices in Minnesota. There were, it is true, some farms here even in territorial days; but they were subsidiary to the lumber camps, and did not even meet the local demand, so that food had to be imported. Horace Greeley of the New York Tribune, who did much to prejudice people against this nothern country, alleged in justification that it "imported loafers, the food they ate and the whiskey they drank." Moreover, until the Treaty of Traverse des Sioux in 1851, settlement was practically confined to the timbered region between the St. Croix and the Mississippi, the prairie section being still held and jealously guarded by the Sioux. This section was indeed first made known, even to people already settled in the ter-

ritory, by a series of steamboat excursions up the Minnesota river in 1850. Mr. J. J. Hill has recorded that even so late as 1856, when he first came to Minnesota, the territory was considered good only for lumber, cranberries and furs. The first wheat to reach outside markets, according to Mr. Hill, was shipped down the Mississippi in 1857, the year before Minnesota became a state; and the first flour, also according to Mr. Hill, was shipped from Minneapolis in 1862, being branded "Muskingum Mills, Troy, Ohio," in order to command better prices. The leading primary wheat market was at first Rochester, later Red Wing, and then Minneapolis. The great Red River district, which received its first agricultural settlers away back in 1811 (the Selkirk settlement from Canada) did not become a factor in wheat production until after 1870, when it secured railway connection with Duluth.

Within the space of a dozen years, the pioneer type of agriculture which prevailed in Minnesota as elsewhere on the frontier, and whose purpose it was to produce everything possible upon the place, gave way to specialized wheat farming for the market. This sudden development on so gigantic a scale as to render Minnesota one of the principal granaries of the world, was due to three causes, two of them common to other parts of the west, and one peculiar to Minnesota, or rather to the spring-wheat district of the northwest. These causes were: first, the introduction of labor-saving machinery for reaping and threshing small grains; second, the coming of the railway; and third, the new milling processes.

The reaper was invented in the Shenandoah Valley as early as 1834; but as the natural market for it was west of the mountains, the factory was moved first to Cincinnati and then to Chicago. The sales, however, remained small down to the Civil War, when the withdrawal of so many men from the fields caused an increase in the

annual sales, within four years, from about 25,000 to 250,000. The threshing machine was also invented as far back as 1840; but it remained of slight effect until the reaper had revolutionized methods of harvesting small grains. These and other improved kinds of machinery, coming into general use at the time when the prairie region of Minnesota was being settled, greatly increased the profits of wheat growing; and this not alone because they reduced the labor cost to a fifth or less, but also and chiefly because they made possible the harvesting of a large crop in a few days, which would otherwise have required many men and many days, and more serious still, would have been exposed to loss from storms before it could be gotten under cover.

The first transportation routes in Minnesota as elsewhere in the middle west, were the rivers—"the roads that run." The first steamboat on the upper river, the Virginia, came up to Fort Snelling, with a government cargo, in 1823. Steam navigation began on the St. Croix in 1838; on the Minnesota in 1850 (to Mankato), continuing until 1872, when the decreasing depth of water and the increasing competition of rail transportation rendered it unprofitable; and on the Red River in 1858. The same year marked perhaps the climax of steamboating on the Mississippi, there being 1,090 arrivals of steamers at St. Paul that season. In those days, La Crosse and Prairie du Chien were the ports of Minnesota for goods going overland to Milwaukee;* Galena was the port for Chicago until the railway from Chicago reached Rock Island (1854); and St. Louis was the principal base of supply and market for Minnesota products.

The first railway in Minnesota was opened in 1862, between the usual head of navigation at St. Paul and St.

*In 1859, the exports of Minnesota via La Crosse and Prairie du Chien were 403 bales buffalo robes, 100 bales furs, 343 bu. cranberries, 70218 lbs. ginseng and 114 bbl. flour. (Flour manufacture in Minn., Minn. Hist. Collections, Vol. X, Pt. 1.)

Anthony, now East Minneapolis. This was the beginning of the Great Northern system. The Minnesota Valley railway, now the Omaha, was also begun in 1865. But progress in railroad building was slow until the "boom" years preceding the panic of 1873. Then railway connection was established between the Mississippi at St. Paul and Lake Superior, at Duluth, in 1870; between Duluth and the Red River at Moorhead, also in 1870; between St. Paul and Chicago in 1871; between St. Paul and the Missouri river at Sioux City, in 1872; and finally, after the panic, between Minneapolis and the Red River Valley at Crookston and St. Vincent, by 1875. Thus in the brief space of five years, the exclusive dependence of Minnesota on steamboats and Red River carts abruptly ceased, and the great routes of commerce by rail were established, much as they still exist today. In a commercial sense, by 1875, Minnesota had arrived.

At the same time occurred a revolution, or rather two of them, in the milling industry. Hitherto the plan had been to set the millstones close together and run them at high speed, thus reducing the grain to flour at one grinding. The pressure was so great as to cause the flour to heat and discolor; and the woody substance in the bran, being imperfectly removed, readily absorbed moisture and affected the keeping qualities of the flour. Both of these difficulties, moreover, were especially pronounced in the case of spring wheat—the only kind that could be grown in Minnesota. But in 1870 Edmund N. La Croix of Faribault came to Minneapolis and introduced the "middlings purifier," a French invention, into "Washburn B" mill; and in 1874 the Hungarian plan of using iron or porcelain rollers, in place of mill-stones, was introduced into the "Washburn A" mill. The essential principle of the new process was multiple grinding with reduced speed and pressure, the wheat berry being at first merely cracked and the bran removed, and then reduced to flour by

successive millings. In this way, the heating and discoloration were avoided, the bran was completely removed, and most important of all, the gluten, lying just beneath the bran and constituting the strength of the flour, was more largely saved. The effect was immediate and striking. Minneapolis flour began to command from $1 to $3 more per barrel than previously; and Minnesota spring wheat, which had been at a discount, went to a premium in the markets. The rise in price was from 10 cents to 40 cents per bushel, averaging perhaps 20 per cent of the previous selling price. This advance in the price of spring wheat rendered farming in Minnesota for the first time a profitable business, and caused an immense rush of immigration within the next few years. It established, in fact, the commercial prosperity of the spring wheat district of the Northwest. And as a result, it rendered spring wheat the principal—and for years almost the sole—commercial product of Minnesota agriculture.

Any reservoir, however, will run dry in time if it is continually drained and never replenished; and by the early '80's the yield of wheat had so far declined in the southern counties, owing to exhaustion of the soil, that more diversified farming became necessary, if general bankruptcy was to be avoided. The first plan was to rotate early ripening varieties of corn, which would mature, in Minnesota, with wheat. But while an intertilled crop such as corn increases the yield of wheat for a year or two following it, owing to the destruction of weeds and the aeration of the soil, it also hastens the decay of humus in the soil and the consequent loss of nitrogen. The last condition of the land is thus worse than the first. To restore nitrogen, either commercial fertilizers must be used, which will hardly pay for a crop yielding as small returns per acre as wheat; or else some legume such as clover, which can secure ni-

trogen from the air, must be inserted in the crop rotation; or, finally, large quantities of organic fertilizers must be applied. Either of the two latter plans calls for the keeping of considerable live stock. About 1884, therefore, the dairy industry began to appear in southern Minnesota, doubtless in imitation of Iowa and Wisconsin, which had previously passed through the same crisis and found their economic salvation in the dairy herd. In subsequent years the dairy industry has spread toward the north, where the great ice sheet left large areas of sandy and stony land better suited to grass and root crops than to grain. And in the district between the Mississippi and St. Croix rivers, north of the Twin Cities, wheat farming has been largely abandoned in favor of potatoes, this district forming the famous Minnesota potato belt. Only the Red River Valley still depends almost exclusively on wheat as a market crop.

Passing now to the consideration of the present wealth of Minnesota, we find the available data scattered, incomplete and inconsistent, having been compiled at different times, for different purposes, and therefore according to different plans. Thus the XII Census dealt only with agriculture and manufacture, a later volume (1902) was devoted to minerals, and still later bulletins to other industries; but owing to the time which elapsed between these several publications, it is not possible to reach a true total by adding together their several totals. Moreover, there is no census report covering the fisheries, or the industries connected with the forest as a whole, or municipal industries, or all forms of transportation, or any kind of mercantile business. The census report on Wealth, Debt and Taxation (1904), again, while covering all kinds of property, classifies them not according to industries but according to the classes—real, personal, etc.—established for purposes of taxation. It is certainly most peculiar and unfortunate that the United States,

with all its expenditure for statistical purposes, seems unable to compile a complete census covering all branches of economic activity, at one time and on a uniform plan.

According to the census report on Wealth, Debt and Taxation, Table 12, Minnesota (ranking 11th among the states as to area) ranks 9th as to the estimated true value of all property, being exceeded only by New York, Pennsylvania, Illinois, Ohio, Massachusetts, California, Iowa and Missouri in the order named. Minnesota thus stands ahead of Indiana, Michigan, Wisconsin, Texas, and even ahead of the whole southeastern group, viz. North Carolina, South Carolina, Georgia and Florida. The total estimated property value of Minnesota in 1904, 3.3 billions, was 3 per cent of the total for the United States (exclusive of out-lying possession) viz. 107.1 billions.

According to the Report of the Minnesota Tax Commission for 1907, the total estimated true wealth of Minnesota, including the increased valuation of the iron properties, is now approximately 3.6 billions, distributed as follows:

	Estimated true value	Per cent of total
Minnesota iron properties	$ 486,723,175	13
Other realty	1,807,552,389	50
Total realty	$2,294,275,562	63
Public service corporations	$ 592,796,305	16
Other personal property	768,373,382	21
Total personal property	$1,361,169,687	37
Total real and personal	$3,655,445,247	100

In default of data as to how these totals of property are to be distributed by industries, recourse must be had to the census figures relating to residence and occupations.

These yield the following comparisons, classing as "urban" all living in towns of 2,500 or more:

Residence and Occupations	Minnesota	Continental U. S.
Per cent of rural population	66	60
Per cent of urban population	34	40
	100	100
Per cent of workers engaged in agriculture	40.1	35.7
Per cent of workers engaged in manufactures	18.4	24.4
Per cent of workers engaged in transportation and trade	17.5	16.4
Per cent of workers engaged in domestic and personal service	19.3	19.2
Per cent of workers engaged in professions	4.7	4.3
	109.0	100.0

From these tables* it appears that there are exactly 6 per cent more people classed as rural, and 6 per cent less people engaged in manufacturing, in Minnesota than in the United States as a whole. Minnesota is relatively young, and entirely lacks coal; these two reasons account for this relative deficiency in manufacturing.

Another point in the tables worthy of note is the fact that there are (relatively) 1.1 per cent more workers engaged in transportation and trade in Minnesota than in the United States as a whole. This surprising showing is no doubt due to geographic conditions—to the fact, primarily, that Minnesota contains the head of navigation both on the Great Lakes and the Mississippi, that these points are the natural foci for railways, and that where land and water transportation meet, wholesale trade and other distributive industries find conditions favorable for their growth.

Coming, next, to an analysis of the data relating to

*Based on tables 36, 65, 66, Abstract XII Census

agriculture, it is instructive to observe the per cent of farms in Minnesota, in the North Central section, and in the United States depending on each of the principal sources of income.

Per cent of farms according to chief source of income	Minnesota	North Central Section	Continental U. S.
Grain and hay	67.1	36.3	23.0
Live stock	12.6	41.7	27.3
Dairy products	6.0	4.9	6.2
Vegetables	2.6	2.2	2.7
Fruits	0.3	0.9	1.4
All other products	11.4	14.0	39.4
	100.0	100.0	100.0

The foregoing table* brings into striking relief the predominance of grain growing in Minnesota, likewise the relatively slight development of stock raising and (in a measure) of the dairy industry. In fact, North Dakota with 88 per cent and South Dakota with 68.3 per cent of their farms given over to grain and hay are the only states exceeding Minnesota; and the next highest on the list is Nebraska, with 49 per cent so occupied. North Dakota, South Dakota and Minnesota thus form a group by themselves, specializing in grain growing. Moreover, this specialization in grain is really a specialization in wheat growing, since out of 11.2 million acres in grains, Minnesota had at the XII Census 6.5 million or 58 per cent in wheat.†

For some time past, however, as already stated, this specialization has been slowly giving way to more diversified types of farming. A comparison of the census figures for 1899, and the figures for 1907‡ will bring this change clearly to view.

*Based on table 119, abstract XII Census
†Based on table 130, abstract XII Census
‡Year Book, Dept. of Agriculture, 1907

Minnesota—	1899	1907
Acres of wheat	6,560,707	5,200,000
Acres of oats	2,201,325	2,530,000
Acres of corn	1,441,580	1,615,000
Acres of barley	887,845	1,185,000
Acres of rye	118,869	88,400
Acres of cereals	11,210,326	10,618,400

From this table it appears that during the last 8 years notwithstanding new land had been rapidly coming under the plow, the total devoted to grain in Minnesota has declined from 11.2 to 10.6 million acres; and further, that the decline is mainly in wheat, which has gone down from 6.5 to 5.2 million acres, and now occupies 49 per cent of the soil devoted to cereals, against 58 per cent 8 years ago. On the other hand, oats, corn, and barley, which all serve more or less as stock food, have materially increased their acreage. At the present time Minnesota stands first among the states not only in wheat, but also in barley, California being her nearest rival; and is surpassed only by Iowa and Illinois (in both cases, however, by a wide margin) in acreage devoted to oats.

A similar conclusion is indicated by the following table* relating to live stock:

Minnesota—	1899	1907
No. of horses	455,122	723,141
No. of dairy cows	646,673	1,019,700
No. of other cattle	570,165	1,305,000
No. of sheep	410,998	436,593
No. of swine	411,353	1,377,000

It would consequently seem that the many advantages of Minnesota for the dairy and stock industries are at last making themselves felt. Among these advantages are: a cool climate, fine pasturage and water supply, location at the gateway of the western range country where

*Based on Bulletin 64, Bureau of Statistics, Dept. of Agriculture

young stock from the west may consequently be finished for market without extra cost for freight, an unlimited supply of concentrated food-stuffs in the by-products of the flour and linseed oil mills, a large crop of barley (which is the best food for the bacon type of hog), excellent markets near at hand in the cities, especially the stock market at South St. Paul and the horse markets at South St. Paul and in the Midway district. The dairy industry also profits greatly, and is rapidly expanding, by reason of being organized on a co-operative basis. Out of 905 creameries in the state in 1907, over 700 were co-operative; and the chief of the Bureau of Animal Industry states in his report for 1907, that farmers receive 6 to 8 cents more per pound for their butter fat in districts where co-operation prevails than in districts where private centralizers have control—an amount which is equivalent to the difference between prosperity and ruin.

In this connection, it is perhaps well to mention the book by Mr. Paul Latzke called "The Predicament of Minnesota," which created so much consternation among friends of Minnesota that the first edition was virtually suppressed. His main thesis is that Minnesota is in a desperately bad way, owing to excessive wheat culture. Now there is no doubt that Minnesota has continued wheat farming too long, like all the north central states in their earlier years; and it was a public service to have this fact pointed out so clearly and emphatically as Mr. Latzke has done it. But while his figures are usually right, his inferences are frequently wrong; and the book as a whole, while it may tend to good agriculture, is bad economics.

A case in point is his argument, based on the increased acreage in wheat from 1890 to 1900, that Minnesota, with a singular and unexampled perversity, after beginning to diversify her crops, had relapsed again into the sole culture of wheat. The increased acreage is a fact; but it means simply that much new land was brought under

the plow and planted to wheat during the decade, especially in the Red River Valley; not that the movement toward mixed farming had received a set-back. On the contrary, that movement, as shown by the last two tables, continues to make steady and fairly rapid progress.

Secondly, Mr. Latzke bases his comparisons on the average returns per acre for all lands included in farms, rather than on the land actually under cultivation; and since only 70.3 per cent of the farm lands in Minnesota are improved, compared with 86.5 per cent in Iowa and 84.5 per cent in Illinois, it is not remarkable that Minnesota makes an unfavorable showing in comparison with those states. This fundamental defect of method vitiates most of Mr. Latzke's conclusions. Moreover when it comes to separate crops, averages per acre are very unreliable, and if taken seriously would lead to some highly original conclusions. In fact, it not infrequently happens that the state having the fewest acres in a given crop has the highest average, either because the crop in question, being out of its natural habitat, receives special care, or because the acreage is too small to yield a safe average. Thus for example, the highest average yields of corn in the United States in 1907, according to the Year Book of Agriculture, were in Arizona (37.5 bushels) and Maine (37 bushels)—doubtless the two places where corn is of the least commercial importance.

Thirdly, by dint of personifying Minnesota, Mr. Latzke seems to forget that after all, farms are not run by the state, nor are they conducted in order to make a good statistical showing, but on the contrary are managed by individual men, with a view to private profit. And the farmer has no advantage in wringing the largest possible return from every acre, so long as land is cheap and he can spread out his labor and capital over more acres. For this reason, extensive rather than intensive cultivation is the more profitable in new countries; and it is not impos-

sible that this condition still obtains, in a measure, even in southern Minnesota. Certainly in view of the difference in the price of land, a farmer in Minnesota could clear a larger per cent on his investment, with a materially smaller yield per acre, than in Iowa.

For this reason, Mr. Latzke's book, in place of keeping people from coming to Minnesota, as some have thought, ought to stimulate immigration; since it merely amounts, even if accepted without qualifications, to a demonstration that agriculture here is still largely extensive rather than intensive, that lands are consequently cheap compared to older states, and that any one who will buy these cheap lands and then farm them intensively is sure of a large profit. On the other hand, if agriculture in Minnesota were already as intensive as in Iowa or Illinois, the land would be just as high priced, and there would be just as little incentive for farmers to come to Minnesota.

Finally, Mr. Latzke points out that the cost of hired farm labor is exorbitant in Minnesota; and here he touches the defect in specialized wheat farming which is certain, in conjunction with the rising value of land, ultimately to force the adoption of a more intensive type of agriculture even in the Red River Valley. The facts are conclusively shown in this table:

Average cost of labor per farm	Minnesota	North Central Section	Continental U. S.
	$108	$65	$62

This excessive cost is nearly equalled in South Dakota ($105) and is exceeded in North Dakota ($203), where, however, the farms are considerably larger. Mr. Latzke offers no explanation of these facts; but there is evidently a common cause at work in all three states, which can only be the fact that specialized wheat farming requires a large labor force for only a few weeks each year, and that high wages must consequently be paid. Moreover, with

the decay of the lumber industry, which has hitherto employed the men in winter, the supply of itinerant workmen seems likely to be smaller and the rate of wages still higher. All of this amounts to saying that specialized wheat growing is in the long run an uneconomic and therefore transitional type of farming.

In connection with the labor question, Mr. Latzke encounters another fact which is still more significant. He finds that relatively to the size of the farms, the cost of labor is materially higher on the Minnesota than on the Dakota side of the Red river. This fact also he is unable to explain, since the Minnesota farms (169.7 acres) are near what he regards as the ideal size, and he can only conjecture that (for some unaccountable reason) the farmers on the Minnesota side hire work done which they should do themselves. In opposition to this view, the opinion is here ventured that the Minnesota farms are not, on the average large enough for the most economical operation in wheat; and that consequently hired help must be employed when large and expensive machinery would do the work quicker and (in the end) cheaper; or if machinery is actually purchased, it cannot be employed continuously enough on a small farm to prove a paying investment. In certain kinds of farming, notably wheat growing, the economy of large scale production is scarcely less marked than it is in factory industries.

Next to the soil the most valuable asset of Minnesota is her mineral wealth. This comprises three principal kinds—building stone, clay, and iron. Unlike most of the farming states in the north central states, Minnesota has not only sedimentary rocks (limestone and sandstone) but also a belt of granite which comes to the surface along the Minnesota river, and apparently extends north to the Lake of the Woods. Beds of clay suitable for use in brick, tile and cement are widely distributed and are of special significance in view of the rapid progress of de-

forestation. Red Wing is doubtless the most specialized center of clay industries in the state.

It is by reason of the immense iron ore deposits of the Vermilion range (opened 1884) and the Mesabi range (opened 1892), that Minnesota has become a powerful factor in the mineral industry of the United States and of the world. In addition to these shipping ranges there are two other ore belts; the Cuyuna discovered in 1905, and one in Otter Tail county, discovered in 1907. The true rank of Minnesota in iron ore will appear most clearly from the following table:*

	Minnesota	Rest of U. S.	Gt. Brit.	Germany
Tons of ore.....	28,969,658	22,750,961	15,500,406	26,734,000
Value of ore.....	$76,668,836	$55,327,311		
Per cent of ore....	56.11	43.89		

Minnesota thus exceeds not only the rest of the United States, but also the greatest ore producing countries of Europe in the production of ore. Moreover, the Minnesota ores carry very high contents of metallic iron, and very low percentages of phosphorus and sulphur, which hinder the making of fine steel; they are mined at exceedingly low cost, especially on the Mesabi range, where steam shovels are largely used; and by means of large lake boats, a gravity system of loading, and automatic unloading machines, iron ores from Minnesota are delivered at the blast furnaces at South Chicago, Cleveland and Pittsburg at prices that defy competition anywhere else in the world.

For manufactures, however, Minnesota is less favorably circumstanced than for extractive industries. Her capital defect is of course the lack of coal. But it should not be overlooked that Minnesota contains the height of land from which rivers flow to Hudson's Bay, the Great Lakes and the Gulf of Mexico; and that these streams af-

*Based on "Mineral Resources" 1907. (U. S. Geol. Survey)

ford abundant water power as they descend from the upland region. Now that water power can be transformed into electricity, and the power thus generated by many minor streams can be concentrated and utilized miles away, water power may well prove adequate to develop a considerable manufacturing industry. How rapidly water power is coming to the front in Minnesota appears in the following table:*

Mechanical power—	Minn.	U. S.
Per cent of increase, 1900-1905:		
All kinds of power	24.0	40.7
Steam power	14.0	33.0
Water power	53.4	13.3
Per cent which steam formed of total power—		
1900	80.0	78.2
1905	73.7	73.9

It indeed appears that Minnesota failed to keep pace with the increase of total power in the country at large. On the other hand in 1905, for the first time in two generations, steam power not only ceased to gain relatively to others, but its per cent of the total actually declined; and this change was especially marked in Minnesota.

Measured by gross value of products, the changes from 1900 to 1905 were more clearly favorable to Minnesota, as shown by the following table: †

Gross value of products of manufacture	Minn.	U. S.
Per cent of increase 1900-1905	38	29

The kind of manufactures chiefly represented in Minnesota will appear from this table: ‡

*Based on Census Bulletins 57 and 88
†Based on Census Bulletin 57
‡Based on Census Bulletin 46

Principal manufactures of Minnesota	1900	1905
Value of products in millions—		
All products	223.6	307.8
Flour and by-products	82.9	122.0
Lumber and timber products	28.3	28.4
Meat packing	7.8	17.5
Dairy products	8.4	12.8

In the flour milling industry, Minnesota has maintained and even increased its lead, now exceeding the output of the two states next in rank. This is all the more remarkable as wheat can be shipped cheaper in bulk than as flour, (18 cents per cwt. from Minneapolis to New York as against 23 cents for flour), and the by-products command higher prices in the east and in Europe than here. Moreover, on wheat shipped to Minneapolis from north or west, the cost of transportation to the mills could be avoided by shipping direct to Duluth. That the milling industry thrives at Minneapolis despite these handicaps is evidence of the potent influence in business success of invested capital, acquired skill, a trained labor force, business connections, and the habit on the part of consumers of buying what they have previously bought.

An important off-shoot of the milling industry is the crushing of flax seed for oil, in which Minneapolis holds much the same preeminence as in flour.

The lumber industry, though holding its own as to value of products, shows a considerable decline in the amount, because the annual cut is many times the annual growth, and the young growth is not saved to perpetuate the forest. Minnesota has now dropped to seventh place in lumber, after Washington, Louisiana, Wisconsin, Michigan, Mississippi and Arkansas. It, however, stands first in the cut of white pine and probably contains the largest reserves of white pine in the country. Planing mill and other secondary forest products show a continued increase in quantity as well as value. Another industry dependent

on the forest is the manufacture of paper from wood pulp The combination of forests and water power in Minnesota would seem especially favorable to the wood pulp industry.

The marked increase in the meat and dairy industries points again to the increase of live stock at the expense of wheat. In view of the presence of abundant hemlock bark, and the accumulation of hides at the packing establishments, conditions would seem favorable for the tanning of leather, especially as there is already a considerable boot and shoe manufacture in the cities to afford a local market.

Finally, there remains the possibility of developing an iron and steel industry in Minnesota. Hitherto the ore has been carried to the coal the world over—for example, from Norway and Spain to England, from Cuba to the United States, from Minnesota to the southern lake ports. The reason was the fact that it took, originally, a number of tons of coal (or coke) and considerable limestone to smelt a ton of ore; hence it was cheaper to ship the ore than the coal. But at present it takes only about three-fourths of a ton of coke, plus limestone, to smelt a ton of ore. Other things being equal, it would therefore seem more economical to reverse the historic process and ship the coke to the ore. Should this actually occur, it would cause an industrial revolution such as the world has not seen since steam first came into use, and all the industries of England migrated to the coal fields. It would, for example, make of Duluth a second Pittsburg, and force Pittsburg, Cleveland and all the other south shore cities to live by the secondary products of the steel industry, such as machinery and fine tools, as some of the New England cities were forced to do when the blast furnaces migrated to Pennsylvania.

Doubtless a revolution so complete as this is not to be expected; certainly not in a day. For one thing coke is

more bulky, ton for ton, than ore. Again there is the question where to secure limestone near the ore. And finally, the largest market for iron and steel products is in the most densely people section—the north atlantic states.

Nevertheless, there can be no doubt that the balance of advantage has materially shifted within the last few years; of that fact, the ten million dollar steel plant under construction near Duluth is conclusive evidence. And so long as there is a large movement of iron ore down the lakes, the ore vessels will carry coal back at extremely low rates, to avoid going in ballast. By virtue of low freight rates Duluth has already become the great distributing center for coal throughout the whole northwest. And with relatively cheap coal, the finest iron ore in the world, abundant water power on the St. Louis river to generate electricity for metallurgical purposes, and the ever-growing market of the northwest at its doors, Duluth is unquestionably destined to become a great, if not the greatest, center of iron and steel manufactures.

THE AGRICULTURAL POSSIBILITIES OF MINNESOTA

By George Welch

One of the great problems before the American nation is to stop the insane desire on the part of the people to move from the rural districts to the congested regions. This is particularly true of our own state of Minnesota which is new and of necessity an agricultural state, where already 53 per cent of her people are living in the cities and villages. The exact conditions may be better understood by an examination of what has actually happened during the ten years from 1890 to 1900. At the beginning of that period, the rural poulation in the United States amounted to 57.3 per cent of the entire population, while in 1900 it was only 51.9 per cent, so we may fairly assume that at the present time there is an equal division of the rural and urban population. In 1895 the urban population in Minnesota was 48 per cent of her entire population, and in 1905 this had increased to 53 per cent. The tenacity with which people follow this lead has never been more clearly demonstrated than during the season of 1908 when the demand for labor in the cities has been light and the people have actually suffered for the necessities of life, yet the scarcity of farm labor has continued as in former years. As a result of this condition, the price of living continues to advance to a height which makes it difficult for the laboring people to remain in the large cities. We are therefore confronted with the problem of how to take care of and feed the 150,000,000 people which are destined to live in these United States during the next fifty years, as it is predicted by most compe-

tent experts that our population will reach that number in 1950.

The human family is peculiarly constructed and it will not stand congested living without deterioration. For example, if you will go with me to the slums of any great city where large numbers of people are compelled to live in small compartments, I will show you a people that are fast degenerating. Neither can they stand isolation. Remove a person from the benefits and privileges of society and he will degenerate. So it is that the highest type of citizenship is derived and eminates from the people who have found the happy medium in society. This, in my opinion, accounts for the great number of our prominent men coming from the agricultural districts of our nation. It is therefore necessary for us as a people to look this problem fairly in the face and ask each other what can we do to keep our boys and girls upon the farms. This will not be enough. It will be necessary in the future to increase the productive capacity of these farms, to make it possible for this land of our ours to take care of the millions of people who are bound to inhabit it.

Our public lands that are capable of cultivation and agricultural production are occupied, so that today little, if any, free lands are to be had in the United States. We therefore turn our attention to the finding of land yet unoccupied which can be secured at moderate prices, and to the education of the tillers of the soil, that lands now being tilled may be brought to a state of cultivation that will materially increase their productive value. No greater field can be found for this development than is offered by the state of Minnesota which has, approximately, 50,000,000 acres of land, 90 per cent of which is capable of agricultural production. Of this not to exceed 18,000,000 acres has ever been plowed. The part that has been cultivated has only as yet been handled by primitive methods when you consider it as a whole.

In reviewing the history of our state, we find some of the early settlements took place in the Red River Valley, but the real settlement of Minnesota began along the Mississippi and Minnesota rivers in the early fifties, and came largely from the eastern states and northern Europe. The settlers were men of limited means, consequently had to follow methods of farming that would insure quick returns in order to support themselves and their families. This, as is true of most new countries, was the production of wheat which was followed so energetically that the land, as time rolled on, ceased to produce the large yields per acre that characterized it in former days. What happened to the southeastern section of our state, happened later to the northwestern section where wheat continues to be the staple product of the district. By reason of the lands ceasing to produce cereal crops in great quantities, our farmers were compelled to seek new and more scientific methods of tilling the soil, and it may be fairly stated that our agricultural development dated from this point. Freeborn county is a notable example, it being one of the early settled counties of the state, and one where the ravages of the chinch bug compelled the farmers to diversify and rotate their crops, and so marked has been the development of diversified farming that today the entire county is dotted with creameries, the yearly product from these alone being 3,814,291 lbs. of butter, netting the farmers $899,227.82. In 1907 this county shipped to markets outside of her border lines, thousands of barrels of apples.

When this change in methods was forced by circumstances, almost every farm in Freeborn county was mortgaged to its carrying capacity, while today few, if any, mortgaged farms are found, and where once stood miserable, dilapidated farm buildings, are seen flourishing and prosperous homes, beautified with orchards, rosebushes, and flower gardens, furnishing an example of

what can be done in other sections of our state with land no less productive, no more favored by climatic conditions, but simply lacking the modern scientific methods of farming.

The southern section of our state may be fairly said to be converted into farms, but its productive value has by no means been reached. Many of the farms are rendered worthless in whole or in part by surface water which could easily be drained by scientific drainage. Quack grass is commencing to ravage the district, and it is only by a constant and continuous warfare upon these evils that this section of Minnesota can be brought to hold the place it deserves—that is, one of the greatest agricultural districts on the American continent. The northwestern section of our state, or that part known as the Red River Valley, has, probably, the richest land on the American continent, and is equalled by none in the world unless it be the valley of the Nile. This has worked to its detriment. Its incomparable fertility has produced such phenomenal crops of grains that the farmers have paid little attention to production of other crops than wheat, oats, flax, barley and corn, until they are confronted with the same situation that confronted the southeastern section twenty-five years ago. In the northeastern section of the state is a region but little known to the people of Minnesota, and not at all to the inhabitants of other states. It has been held up until very recently as a district of sand and icebergs and of no agricultural value, comparatively speaking. This district was originally covered with a dense forest, the popular opinion being that it was all pine; but I am informed by our state engineer that not to exceed 10 per cent ever had pine upon it. I mention this because it is a popular impression that pine grows only upon sandy soil, which is erroneous in the extreme. Pine timber may be found on soil so sandy that it would be valueless for anything except reforestation, and it may also be found on

the heaviest clay soil. Tests have been made in this section of the state in the production of all kinds of agricultural products, and it is today the universal opinion that there is no section in America that equals this part of Minnesota for the production of root crops and tame grasses. I do not wish to be understood that this section has failed to produce cereal crops, for such is not true; but the place to produce any given commodity is where it can be produced the best and the cheapest, and for that reason I state that this part of Minnesota is particularly adapted to the production of dairy products and root crops, for I contend that a given tract of land in northeastern Minnesota will pasture nearly double the amount of cattle or any other live stock than will the same area in the more highly developed sections of the Mississippi Valley.

We have upwards of 6,000,000 acres of land in this district that are known as swamp lands, all of which can be easily drained, and as a large part of them are now denuded of timber, when drained can be immediately turned into productive farms. The state is doing magnificent work in this direction which is aiding in a large measure the settlement of this part of Minnesota. The cheapness of the land, the productiveness of its soil, the timber thereon which can be used for fuel and building material by the incoming settler, make this a desirable location for a man of limited means on which to build a profitable farm home.

No better opinion can be formed of the capabilities of the state of Minnesota to produce agriculturally than by a short review of what she has accomplished. In 1858 the entire farm products of the state amounted to less than $7,000,000, while in 1907 the combined products of the farms amounted to $265,000,000, notwithstanding the small percentage under cultivation .

Authorities differ widely on what has been produced

per acre from Minnesota lands, but according to the figures of the Department of Agriculture at Washington, issued recently, we find the average value produced in Minnesota is $12.27, when we combine the following products: corn, wheat, oats, barley, flax, and hay. This average has been lowered materially by the low price paid to Minnesota farmers for hay, as compared with the other states. Nevertheless it compares well with other Mississippi Valley states—the average being in Illinois $14.60. Iowa $11.80, Nebraska $10.39, South Dakota $10.51, and North Dakota $9.59½. The amount of acreage tilled, however, in Minnesota is lamentably low, being 34.1 per cent of the whole tillable area as compared with 76.4 per cent in Illinois and 83.4 per cent in Iowa.

From the foregoing it will readily be seen that there are two propositions confronting Minnesota people to bring agricultural production to where it should be: first, more people to till the soil; second, a more scientific method in tillage by specializing products. From my experience I would say it is not necessary to create a demand for the Minnesota lands, as that already exists, the difficulty being that the thousands of persons desirous of building farm homes do not know of the opportunities existing in the state. It is therefore simply a question of acquainting the public with the facts as they exist, after which our agricultural population will double in a few years. By more efficient agricultural education I have no hesitation in predicting that the tilled land in Minnesota may be brought to produce double the quantity of agricultural products that it now produces. Diversified farming, which means changing from a one-crop system to a rotation of crops, is of value not only to the land, but enables us to grow quite as much grain as we ever did and the other products in addition. In addition to diversified farming there are the possibilities of specialized farming. For instance, different sections are especially adapted for special lines of

farming. The southern section of Minnesota is destined to become prominent in the production of meat products because of the adaptation of the soil and climate to produce large yields of corn, while the northern section is pre-eminently a clover and grass country and will in time become famous for its dairy industry. Northrup-King & Company last year paid as high as $56.00 an acre to farmers who raised clover seed, paying $8.50 per bushel in the field. At the town of Princeton, Minnesota, dealers there bought $25,000 worth of clover seed the second year after the business of selling seed was started. This is all clear gain to the farmers of that section and a new industry. Farmers in northern Minnesota can also specialize in the business of growing seed potatoes and seed grains. Potatoes, if taken from northern Minnesota into Iowa and Illinois will usually out-yield native varieties from ten to twenty-five bushels per acre for two or three years, until they naturally deteriorate. Most of the seed potatoes in the southern states used for growing the early spring crops come from the northern states of which Minnesota forms so prominent a part. Other sections can specialize along other lines, and for the purpose of demonstrating, I cite a few individual cases that have come to my notice: For instance, the town of Long Lake, near Lake Minnetonka, has grown to be one of the largest shipping points in the country for berries. A fruit growers association was formed in 1897, and the first year $8,000 worth of fruit was shipped from this locality. In 1903, the shipment had grown to $75,000.

This illustrates the wisdom of specializing in a country suited to the business at hand. Mr. John Bailey at Red Rock, Minnesota, specialized in melon growing. By good farming he has increased the value of his land from $40 an acre until at the present time it is valued at about $250 per acre, and his profits, on 115 acres annually amount to around $3,000. F. H. Gibbs has a 17-acre farm near St.

Paul which he finds is well adapted for onion growing. Last year on three and one-half acres he raised 3,000 bushels of onions which sold at 55 cents per bushel. W. S. Moscrip, a dairy farmer near North St. Paul, rents a farm at $1,000 a year rental, and by specializing in the dairy business receives an annual profit of from $2,500 to $3,000. Mr. G. G. Hartley of Duluth opened up a farm in the swamps of western St. Louis county and after draining the land which was not valued to exceed $5.00 per acre, the following year produced, on a tract of ten acres, $10,000 worth of celery.

Another feature of the possibilities of Minnesota lies along the line of more intensive farming. Our farms are too large in size. We can farm less land and farm it better. The history of all old countries shows that as land becomes more valuable and the country older, a natural sub-division of property occurs.

When intensive farming has become general in Minnesota, as it has in the older communities, and the 27,000,000 acres yet uninhabited within our borders are cultivated and brought to the highest point of agricultural development, she will stand out pre-eminently, when compared with the other commonwealths of the union, as the most productive state on the American continent. Combining a soil of incomparable fertility with a climate most delightful and salubrious, unburdened with the luxuriant growth of the tropics or the eternal winters of the northern zone; located at the very doorway of the best markets in the world, it would seem to me no greater heritage could be given a man than a Minnesota farm.

EARLY RAILROAD LEGISLATION BETTER IN MINNESOTA

By RASMUS S. SABY

PART I

THE ORIGIN AND DEVELOPMENT OF RAILROADS IN MINNESOTA

The territory of Minnesota was organized by an act of congress approved March 3, 1849. It comprised all of what is now the state of Minnesota and the portions of the Dakotas east of the Missouri and White Earth Rivers. Alexander Ramsey of Pennsylvania was appointed its first governor.

There were in 1849 only a few straggling settlements along the principal rivers. According to the territorial census taken that year the population numbered 4,680.[1] The assessable property amounted to only $414,936. The Sioux Indians still occupied the land west of the Mississippi and Minnesota on the whole was "unsettled and unsurveyed."[2]

But the pioneers had an unbounded faith in the future. Governor Ramsey, in his first message to the legislative assembly says, "No portion of the earth's surface perhaps combines so many favorable features for the settler as this territory. * * The immigrant and the capitalist need but perceive these sources of prosperity and wealth to hasten to seize upon them by settling among us. * * It may not be long ere we may with truth be rocognized

(1) House Journal (Minn.) 1849, p. 214
(2) Council Journal (Minn.) 1849, p. 187

throughout the political and moral world, as indeed the 'polar star' of the Republican Galaxy."[3]

But though the early settlers saw visions of future greatness and wealth, their present condition was not so ideal. The eastern markets on which they were largely dependent were distant and not easily accessible, and the different settlements were in poor and primitive communication with each other. There was but one mail route leading into the territory on which was transmitted a weekly mail from Prairie du Chien, Wisconsin, during the season of navigation and a semi-monthly mail from the same place during the winter season.[4] Many new roads were needed and some of the existing roads were so bad that at times many settlers were prevented from procuring even the most necessary supplies.[5] Nine memorials concerning roads and mail routes were sent to congress in 1849,[6] and to all these congress "responded in the affirmative and made the necessary appropriations."[7]

Wagon and military roads were necessary and answered their purposes, but other means of transportation were fully as essential to the growth and development of the new territory. The magnificent river systems seemed to afford an admirable means of connecting the different parts of the territory with each other and the whole with the outside world. Congress had provided for roads, why should it not also open these natural highways of commerce? The improvement of the "majestic Mississippi" with its gigantic trade, affecting the interests of so many states seemed logically an object of national magnitude and national importance.

It was urged that the improvement of these rivers would expedite the sale and facilitate the settlement of

(3) Council Journal, 1849, p. 7
(4) From Memorial to Congress, Laws of Minn. 1849, p. 171
(5) Memorial, Laws of Minn., 1849, p. 172
(6) Laws of Minn., 1849, Memorials Nos. 1, 3, 4, 6, 9, 10, 11, 13, 14
(7) House Journal, 1851, p. 22

the public lands through which they flowed. And besides, had not the federal government assumed special jurisdiction over all navigable streams?[8]

Congress, however, was not disposed to undertake any such "internal improvements." Its activity in this line had ceased back in President Jackson's administration.

By this time railroad construction had made great progress in many of the older states. Wisconsin territory, of which Minnesota territory had been a part, had incorporated a number of railroad companies, two of them as early as 1836,[9] but naturally, what later came to be Minnesota was not much affected either by the agitation or by the projects at this time. But Minnesota territory soon saw the advantages and possibilities of the railroad. Already in 1851, its legislative assembly memorialized congress for a "liberal donation and appropriation" in aid of railroads.[10] A bill to incorporate a railroad company passed the house of this assembly, but was negatived in the council.[11] In 1852 an attempt was made to incorporate another railroad company, but the bill failed to pass the house in which it originated.[12]

By 1853 the transportation problem had assumed a different phase. The boasted river systems were seen to be inadequate even though they were extensively improved. They would have to be supplemented by railroads, if the territory were to enjoy proper transportation facilities. A railroad would be needed to connect the navigable waters of the Mississippi and of the Red River of the North, and another to connect the Mississippi with Lake Superior.[13] The arguments which had been used to urge congress to build roads and improve rivers were now used in favor of federal aid in railroad construction.

(8) House Journal, 1851, p. 16ff
(9) Laws of Wisconsin, 1836, pp. 33 and 54
(10) Laws of Minn., 1851, Memorial No. 4
(11) St. Paul and St. Anthony Ry. Co., H. F. No. 15
House Journal, 1851, p. 127; p. 150
(12) Lake Sup. & Miss. Ry. Co., H. F. No. 46
House Journal, 1852, p. 184
(13) Message of Gov. Ramsey, Council Journal 1853, p. 30

Through the repeated efforts of Stephen A. Douglas and others, the Illinois Central received a federal land grant in 1850.[14] In 1853 Governor Ramsey recommended that the legislative assembly memorialize congress for similar grants in aid of Minnesota railroads. The sentiment was strong at the time that public lands ought to be so managed as to secure their speedy settlement. The governor in this message outlined quite definitely what soon came to be the settled railroad construction policy of the territory, namely, through federal aid in the form of land grants, to build railroads in advance of actual business needs to settle the country and develop its resources. But the legislative assembly evidently did not support the governor's plan by acclamation. Three memorials to congress concerning railroads and railroad land grants were drawn up, but they all failed to pass.[15] Seven bills to incorporate railroad companies were introduced at this session, of which five passed after discussion and amendment.[16] Only two of these charters make any mention of probable federal or state land grants.[17]

In 1854, the Minnesota and Northwestern Railroad Company was incorporated and by its charter any future federal land grant was made over to it in fee simple "without any further deed and action." The same assembly memorialized congress for a grant of lands.[18] Congress complied, but provided that the land should not accrue to any railroad company already "constituted or organized."[19] Friends of the Minnesota & Northwestern, however, managed to get this provision enrolled as "constituted and organized."[20] Since the company, though incorporated, was not yet definitely organized, this change

(14) Ibid., p. 30; 9 U. S. Stat. 446
(15) Council Journal, 1853, p. 29, H. F. No. 1; House Journal, 1853, pp. 108 and 198, C. F. Nos. 2 and 3
(16) See House Journal, 1853, Index. C. F. Nos. 2, 6, 7, 16, 21 passed; C. F. No. 11 and H. F. No. 4 did not pass
(17) Laws of Minn., 1853, Ch. 10, sect. 18; Ch. 16, sect. 14
(18) Laws of Minn., 1854, p. 159
(19) 10 U. S. Stat. 302
(20) Council Journal, 1855, App. p. 5

would give the company a technical claim to the land. But the changes were discovered and an investigation followed. The result was a repeal of the land grant act about a month after its enactment.[21] The right of congress to repeal this act was contested, but after a long process of litigation the repeal was held valid by the United States supreme court.

A tremendous spirit of opposition was aroused on the chartering of this company. It was claimed that the legislature had acted without sufficient consideration; that the territory had secured no "resulting interest" in the land grant; that there was no provision in the charter authorizing its amendment. The one on whose means they had mainly depended for the construction of the railroad had become a "fugitive from the justice of the community he had basely swindled."[22]

When an amendment to the charter was proposed in 1855, Governor Gorman in a special message concerning the Minnesota & Northwestern Railroad Company asserted that the purpose of the re-enactment was evidently to cure all failures and defalcations of the company. He urged the assembly to do what it could to secure the repeal of the charter by congress.[23] On the other hand, the assembly received numerous petitions from interested districts expressing full confidence in the railroad company.[24] The contested amendment was passed by a large majority,[25] and other amendments were also made evidently on the assumption that the company had a legal right to the land grants. In his message the next year, 1856, the governor reported that the Minnesota & Northwestern R. R. Co. had not made the $150,000 guarantee deposit required of it, the amendments had not been accepted and no money had been expended in the construction of the

(21) 10 U. S. Stat. 575
(22) House Journal, 1855, App. p. 44
(23) Council Journal, 1855, App. p. 73
(24) House Journal, 1855, see App.
(25) Council Journal, 1855, p. 142

railroad.[26] The need of railroads was felt more keenly than ever. Said Governor Gorman: "I should be glad to see an outlet by railroad from our winter home at any sacrifice of individual opinion as to policy and indeed any other reasonable sacrifice save the honor of the territory and the enthrallment of those who take our places."[27]

Many railroad companies had been incorporated during these years, but none of them seemed very active. The territory was growing in population and in wealth. By 1857 Minnesota had over 150,000 inhabitants and taxable property amounting to nearly $50,000,000.[28] It was long believed that though formidable objections might exist to granting land for railroad purposes within states, such objections could not be raised against grants to territories under the "quasi-guardianship" of the general government.[29] But it was now found that the same objections applied and that a territory in its dependent position did not occupy such a favorable place after all.

It was also of special importance to Minnesota at this time that she "be a state and fully represented" because of a projected railroad to the Pacific. Depending upon the final location of this road, she might become the "wealthiest of states" or a "mere feeder."[30] The gravity of the situation awakened a sense of responsibility. The territory was now eager to step out from its dependent position and assume the duties and privileges of statehood.

Minnesota territory had reason to be grateful to the twenty-fourth congress. The Minnesota enabling act was passed Feb. 26, 1857[31] and one week later extensive land grants were made to aid the construction of Minnesota

(26) House Journal, 1855, App. p. 6
(27) Ibid., p. 7
(28) Second Annual Report of the Com. of Statistics for 1860-61, p. 121
(29) Council Journal, 1855, p. 39
(30) House Journal, 1857, p. 43
(31) 11 U. S. Stat. 166

railroads.[32] An extra session of the legislative assembly was convened to consider these acts. Minnesota was now free to "organize her own institutions in her own way;" the land grants were hailed as inaugurating a new era in the progress of her people.[33]

The legislative assembly accepted the land grants in trust and granted them conditionally to four railroad companies, three of which had been previously incorporated. These have become known as the land grant companies. With St. Paul and Minneapolis as a center they were planned primarily to market the grain raised in the Mississippi and tributary river valleys in Minnesota, and in the great Red River valley in the northwest.

1. The Minnesota & Pacific Railroad Company was incorporated at this session and authorized to build a railroad from Stillwater by way of St. Paul, St. Anthony and Minneapolis to Breckenridge, with a branch from St. Anthony to St. Vincent.[34]

2. The Transit Railroad Company was to build a line from Winona by way of St. Peter to the Big Sioux River south of the 45th parallel of north latitude.[35]

3. The Root River and Southern Minnesota Railroad Company was to build one railroad from La Crescent via Target Lake up the valley of the Root River to Rochester, and another railroad from St. Paul and St. Anthony, via Minneapolis, Shakopee City, Mankato and other cities to the Iowa line "in the direction of the mouth of the Big Sioux River."[36]

4. The Minneapolis & Cedar Valley Railroad Company was to build a railroad from Minneapolis to the south line of the territory of Minnesota west of range sixteen.[37]

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(32) 11 U. S. Stat. 195
(33) Council Journal, 1857, Ex. Session, p. 6
(34) Laws of Minnesota, 1857, Extra Session, p. 4
(35) Ibid., p. 16
(36) Ibid., p. 18
(37) Ibid., p. 20

The state constitution, drawn up by the constitutional convention in 1857, provided that the credit of the state should never be given or loaned in aid of any individual, association or corporation; that the state debt should never exceed the aggregate of $250,000 except by a two-thirds vote of both houses, yeas and nays recorded; no corporation was to be formed under a special act except for municipal purposes; each stockholder in any corporation was made liable to the amount of stock held; common carriers were to be bound to carry mineral, agricultural and other productions or manufactures on equal and reasonable terms.[38] These are vital provisions and show that Minnesota intended to profit by the experience of the other states. They were not adopted, however, without strong opposition in the convention.[39] The people of the state ratified the constitution almost unanimously.

A general railroad incorporation law was passed during the first session of the state legislature.[40] It is almost *verbatim* like that of Ohio.[41] Its provisions are liberal and do not differ materially from those found in the ordinary charters of the time. It did not attempt to restrict construction according to any definite plan. The amount of capital stock was limited to the "amount of capital necessary to construct the road," and the increase of stock issue was made comparatively easy. A maximum rate of freight and fare was fixed. Full annual reports were required, but, as was the case with other requirements, the companies evidently were supposed to comply of their own free will.

But in the meantime, "hard times" had set in. In Minnesota, as elsewhere, there had been "wild riots of financial adventure." The influx of population had been abnormally large for several years and during this specula-

(38) Constitution of Minn., Art. 9, sec. 5; Art. 10, secs. 2, 3, and 4
(39) Minn. Constitutional Debates (F. H. Smith, Reporter)
(40) Laws of Minn., 1850, p. 166
(41) Revised Laws of Ohio, 1854, Ch. 29

tive period property values had been greatly exaggerated.[42] When the bubble burst both cash and credit disappeared. Promising railroad construction was nipped in the bud and the state began to fear that the land grants would eventually be forfeited on account of the inability of the railroad companies to meet the specified time requirements. Something "had to be done" to relieve the strained financial situation and to help the railroads.

To meet the emergency the legislature proposed an amendment to the constitution, whereby state bonds to the extent of $1,250,000 might be issued to each of the four land grant companies.[43] The bonds were to be given at the rate of $10,000 for every ten miles of road ready for superstructure and similarly $10,000 for every ten miles "actually completed and cars running thereon." The idea was to loan the credit of the state temporarily to the railroads and these were to pay interest and all expenses connected with the bond issue. The net profits of the companies were pledged to meet the interest and the first two hundred and forty sections of land accruing to each company was to be placed by deed trust at the disposal of the governor and secretary of state and the railroads were furthermore to give first mortgage bonds on the roads, lands and franchises equal in amount to the loan. The people of the state ratified the amendment by an "overwhelming majority of votes."[44]

The bond issue was expected to expedite the railroads and to secure the issue of a safe currency at no cost whatever to the state,[45] but the specious financial scheme proved a dismal failure in every way. The railroad companies did not proceed according to the spirit of the amendment. They refused to give an exclusive first mort-

(42) Second Annual Report of Com. of Statistics for 1860-61, page 98
(43) Laws of Minn., 1858, p. 9ff. (March 9, 1858)
(44) House Journal, 1859-60, p. 15
(45) Ibid., p. 389ff. Report of Special Com. on Ry. Grants and Minn. Ry. Bonds

gage to the state and won out against the governor in the courts. The bonds which were at first eagerly sought at par could not be disposed of at any reasonable price.[46] The companies did not furnish "one dollar of capital" but sold and hypothecated large portions of bonds at a ruinous discount. In all $2,275,000 in bonds were issued. They paid extravagant salaries to incompetent and inefficient officers. "Fifty miles of well-built superstructure * * and incomplete, fragmentary and disjointed portions of grading costing on the average less than $3,000 per mile * * * were all that the companies could show in return for the munificent issue of bonds made by the state."[47] The hard times continued and the state was too poor to submit to taxation to pay even the interest on the bonds.[48] Besides this, the people looked upon the bonds as a railroad obligation and not as a state obligation and when the legislature convened in 1860 it proposed by a concurrent resolution an amendment to the constitution whereby the bond issue amendment was expunged from the constitution, reserving to the state, however, the rights, remedies and forfeitures accruing under it. No tax was to be levied to pay interest or principal on the railroad bonds without a vote of the people.[49] This amendment was almost unanimously ratified.

The railroad companies having defaulted, an act of March 6, 1860, required the governor to foreclose the deeds of trust held by the state and authorized him to buy in the railroad property and franchises for the state.[50] It was deemed particularly desirable for the state to retake her grants before the next session of the legislature. Though temporary injunctions were secured against him, Governor Ramsey foreclosed the mortgages and bought

(46) Ibid., p. 17
(47) House Journal 1859-60, p. 390, Report of Concurrent Committees on Railroads, Railroad Grants and Minn. Railroad Bonds
(48) Ibid., p. 19
(49) Laws of Minn., 1860, p. 297
(50) General Laws of Minn., 1860, Ch. 82

out the four railroad companies "for the sum of one thousand dollars in each case."[51]

The legislature which met in 1861 was nominally free to carry out any policy which it might deem conducive to early railroad construction and to the best interests of the state. The land grant companies, of which the state was now in possession, represented the more important projected railroads of the state and in connection with them were the immense federal land grants. Railroads so heavily subsidized, if properly managed, ought to be assured of success. But Minnesota could not build the roads herself, she merely held the corporate rights temporarily "without merger or extinguishment."[52] The Minnesota & Pacific was regranted its former road, lands, properties, privileges and immunities free from all liens thereon held by or on behalf of the state.[53] The property and franchises of the other companies were "continued, granted and transferred" to different groups of persons named in the enactments.[54] The companies were "required" to deposit with the governor the sum of $10,000 each as a guarantee of good faith, to be forfeited if their obligations were not fulfilled. No mention is made of the railroad bonds for they had been virtually repudiated by the constitutional amendment of the previous year.

The federal land grant of 1857 had not provided for a railroad connecting the Mississippi with Lake Superior. Governor Ramsey, in his message in 1861, pointed out how important such a railroad would be to the agricultural interests, especially if "in the precipitate madness of sectional excitement" the free navigation of the Mississippi should be obstructed. He suggested the donation of state swamp lands in aid of this proposed road.[55] The legislature accordingly "amended and continued" the Ne-

(51) Executive Docs., 1860, Governor's Message, p. 10
(52) So held later in Ry. Co. vs. Parcher, 14 Minn., 297
(53) Special Laws of Minn., 1861, Ch. 5
(54) Ibid., Chs. 2, 3 and 4
(55) Ex. Docs. 1860 Governor's Message (Jan. 1861), p. 12

braska and Lake Superior charter of 1857[56] and granted the "new" company swamp lands for seven miles on either side of the road. The lands were to accrue as fast as each and every consecutive twenty miles was located and completed.[57] Continuity of corporate existence was necessary for the land grant companies, hence the legislature could not very well revoke the old territorial charters and incorporate new companies under the general railroad incorporation laws. But the case of the Nebraska & Pacific was different. Here a new set of incorporators under a new name received virtually a new special charter. The old charter rights could have been declared forfeited by judicial proceedings and the legislature would have been free to incorporate a new company under the general laws to build this railroad.

With the outbreak of the Civil War, all railroad enterprises were again suspended. The Minnesota & Pacific was the only land grant company that had complied with the laws of paying the costs of foreclosure and depositing $10,000 security. But the security was forfeited because the company failed to construct a road from St. Paul to St. Anthony by Jan. 1, 1862, as required.[58] The state remained proprietor of the land grant "railroads"—there was as yet, not one mile of completed railroad in the state.

There was another general regrant of land grant railroad franchises in 1862. The old rights of the Minnesota & Pacific were now granted and transferred to a group of men named in sections one and two of the enactment, and the name changed to St. Paul & Pacific Railroad Company.[59] This act was considered an amendment to the territorial charter and left out of account the regrant of the previous year except to make provisions concerning the liability incurred prior to Jan. 1, 1862.[60] The com-

(56) Laws of Minn., 1857, Extra Session, Ch. 93
(57) Special laws of Minn., 1861, Ch. 1
(58) Ex. Docs., 1861, Governor's Message (Jan. 1862) p. 22
(59) Special Laws of Minn., 1862, Ch. 20
(60) Ibid., Ch. 20, Sect. 12

pany was to make a guarantee deposit of $10,000 as an evidence of good faith and ability. The charter and land grant rights of the Minneapolis & Cedar Valley Railroad Company were "continued, granted to and vested in" a new group of men. This company was required to deposit $10,000 if any other group of nine men were willing to deposit that amount and assume the obligations and rights of the company.[61] The acts dealing with the other two companies make no mention of deposits.[62] The Transit was also turned over to a new group of men and its name was changed to Winona & St. Peter Railroad Company.[63]

During the next few years the territorial charters of the land grant and other railroad companies were "amended" frequently, but it seemed optional with the companies to accept or to disregard the amendments at their pleasure. Few general railroad laws were enacted during this period. It is clear that the idea of "legislating railroads into existence" had not yet been abandoned. The legislatures, as long as they had federal and state land grants at their disposal and later when the "time limits" set for the completion of railroads were about to expire, tried to drive the best bargains possible in each instance through special legislation. And railroads were actually appearing on the scene. In the year 1862 the St. Paul & Pacific built ten miles of railroad and trains began to run between St. Paul and St. Anthony. By the end of 1865, notwithstanding the Civil War, which had then just been concluded, there were two hundred and ten miles of railroad in the state of which one hundred and ten miles had been built in that one year.[64] In the four following years, 105, 114, 131 and 210 miles respectively were built. The year 1870 added 322½ miles more making a total of 1092½ with

(61) Ibid., Ch. 17
(62) Ibid., Chs. 18 and 19
(63) Ibid., Ch. 19
(64) Report of the Railroad Com. (Minn.), 1871, p. 42
(65) Ibid., p. 42 and table opposite p. 40

gross receipts amounting to $2,968,555.01 that year. The state railroad commissioner's map of Minnesota for 1872[66] shows that St. Paul and Minneapolis, situated at the head of navipation of the Mississippi River, were, then as now, the center of the railroad systems. There were railroads along some of the more important rivers and other railroads connected different river systems with each other and with Lake Superior.

The general tendency in the railroad legislation in the sixties was toward state control. In the years 1862-65 numerous enactments provided that passengers and freight delivered from connecting lines should not be discriminated against.[67] Two enactments made a special provision to the effect that wood was to be shipped at a rate similar to that charged for other freight.[68] One of these extended the "time limit" of the company with this as one of the conditions.

In 1866-67 several enactments provided that "said company shall be bound to carry freight and passengers upon reasonable rates." Two companies were granted time extension with this and a new time limit as the only conditions.[69] One company was authorized to withdraw a $20,000 guarantee deposit if it would submit to this exaction.[70] Another company was authorized to build a branch line with this as the only special obligation placed upon it.[71] The provision is likewise found in an "amended and continued" territorial charter re-enacted in 1867.[72]

In 1866 two enactments authorizing the building of branch roads provide that "the legislature hereby reserves the right to regulate the price of freight and fare

(66) Ibid., map inserted opposite title page
(67) Special Laws of Minn., 1862, Chs. 17, 19, 20; 1863, Chs. 1, 2; 1864, Ch. 1; 1865, Ch. 2
(68) Special Laws of Minn., 1865, Ch. 6; 1867, Ch. 11
(69) Ibid., 1866, Chs. 4 and 9
(70) Ibid., 1866, Ch. 6
(71) Ibid., 1867, Ch. 18
(72) Ibid., Ch. 11

upon said branch road."[73] An Iowa company was authorized to build railway lines to connect with a Minnesota railroad specifying as one condition that the legislature might "regulate the price of freight and fare upon said road or any branch thereof; and * * * alter or amend any provision of this act."[74] This was in the year 1867 when there were little more than four hundred miles of railroad in the state, all of which had been built since 1862.

From the first, the gross income tax was invariably associated with federal land grants. This idea seems to have originated in Illinois, in connection with the Illinois Central, the pioneer land grant railroad company. The state constitution provided that "all taxes to be raised in this state shall be as nearly equal as may be, and all property on which taxes are to be levied shall have a cash valuation and be equalized and uniform throughout the state."[75] When state lands were given no mention was made of gross income tax, for instance, when the Lake Superior & Mississippi was given state swamp lands in 1861.[76] But when the same company four years later was given a federal land grant a gross income tax was imposed upon the company in lieu of all other taxes.[77] In the former case a gross income tax would have been unconstitutional, but in the latter the state had full freedom of judgment as to manner and means of disposition, within the terms of the land grants, as a trustee of the general government. The constitution did not restrict the state in carrying out this trust; and, as a trustee, the state imposed this form of taxation which was supposed to be "less burdensome and vexatious to the companies, especially in their infancy, and ultimately more advantageous and productive to the

(73) Ibid., 1866, Chs. 7 and 9
(74) Ibid., Ch. 8
(75) Constitution of Minn., Art. 9, Sec. 1
(76) Special Laws of Minn., 1861, Ch. 1
(77) Ibid., 1865, Ch. 2; Land Grant of May 5, 1864, 13 U. S. Stats. 64

revenues of the state and clearly more just to all the localities therein."[78] The United States supreme court upheld the tax later.[79]

Three per cent was at first the usual rate required, but when railroad construction actually began the burden was temporarily made lighter. By special enactment in each case, every company having claims to federal land grants and subject to the gross income tax was, by 1865, required to pay only one per cent of its gross receipts annually for the first three years after the first thirty miles had been completed, two per cent for the next seven years and after ten years three per cent. The nine railroads paying gross income tax in 1870 paid according to this plan.[80] In connection with the gross income tax naturally came a certain amount of state supervision of accounts. The governor, or any other person legally appointed, was given authority to inspect the books and papers of the railroad companies and to examine their officers, agents and servants under oath to ascertain the truth of their reports.

In 1871 the railroad commissioner estimated the total land grants to railroads at 12,222,780 acres, "an area larger than the whole of Massachusetts, Rhode Island, Connecticut and one-half of New Hampshire, embracing much of the finest wheat land in America."[81] Up to the close of the year 1870 municipal aid to these railroads had been voted to the sum of $1,781,500, of which $388,000 had been received.[82] The commissioner valuing the lands given the first division of the St. Paul and Pacific at $5.50 and $7.00 per acre, says: "It appears then that the public has granted for its construction $43,452

(78) St. Paul vs. Ry. Co., 23 Minn. 469
(79) Stearns vs. Minn., 179 U. S. 224
(80) Report of the Railroad Com., 1871, Table op. p. 40
(81) Ibid., p. 12
(82) Ibid., Table 10, p. 50

per mile for the length of the road."[83] Other railroad companies had received in lands and municipal aid from $8,400 to $29,000 per mile according to his estimation.[84] The people were now beginning to figure the value of the land grants in money. Nor was the bond issue of 1858 forgotten. Although the bonds were practically repudiated in 1860, there was a strong sentiment that a settlement would and should be effected. The state had heavily subsidized these railroads and as a result out of a total mileage of 1,092½ miles 993½ miles were operated by land grant companies, although thirty-nine other railroad companies had been incorporated under the general incorporation law in the years 1858 to 1870[85] We find then that over ninety per cent of the mileage was governed by special law and subject to an extra-constitutional system of taxation. These favored companies enjoyed many special charter privileges, it is true, but still the main lines were bound to carry freight and passengers at reasonable rates, and the rates on several branch lines were directly subject to the regulation of the legislature if it saw fit to exercise this power. Other companies were subject to fixed maximum rates.

The main railroad problem at first had been how to get railroads constructed. But when the railroads began operation the problem became more complex, as we may infer from the tenor of the amendments and enactments referred to. Railroads were being built in advance of the business needs of the country and competition for larger shares of the meager business soon led to discrimination. It was not long before loud and angry complaints of unjust and burdensome discrimination were heard. The farmers often had to haul their wheat fifteen or twenty miles to escape discrimination. Between cer-

(83) Ibid., p. 13.
(84) Ibid., p. 12ff
(85) Ibid., see list, appendix p. 93ff

tain points rates were so high that farm products and merchandise could be hauled more cheaply by team.[86] This bore down heavily on individuals and on communities. The state seemed to be at the mercy of the "corporations" in spite of law and justice. The situation was all the more exasperating because the railroads operating at the time had been aided to such an extent that they might well be considered "built by the state through her agents to whom she furnished the capital." Right of way had been given for a "public purpose," and from this it was further argued that all had an equal right to service. Vested rights of corporations had been upheld by the courts, but now the people began to believe that they too had certain "vested rights" and they meant to assert them. This revolt against railroad oppression has become known as the Granger Movement and marks the beginning of a new epoch in the history of our railroads.

PART II

Comparative Study of the Territorial Charters

The territorial legislature of Minnesota incorporated twenty-seven railroad companies. With the "Act to provide for the incorporation and regulation of railroad companies," passed by the first state legislature in pursuance of article 10, section 2 of the constitution, grants of special railroad charters ceased, at any rate formally. Old charters were, however, frequently "revived and continued" and answered the purpose of new special charters.

(86) Ibid., p. 17

RAILROAD CHARTERS GRANTED BY THE TERRITORY

No.	Name of Co.	Date	Citation, Session Laws of Minn.
1.	St. Paul & St. Anthony Falls	March 2, 1853	1853 Ch. 12
2.	Minnesota Western	March 3, 1853	1853 Ch. 10
3.	Louisiana & Minn.	March 5, 1853	1853 Ch. 6
4.	Mississippi & Lake Superior	March 5, 1853	1853 Ch. 15
5.	Lake Sup., Puget Sound & Pacific	March 5, 1853	1853 Ch. 16
6.	Minn. & Northwestern	March 4, 1854	1854 Ch. 47
	(Transit, not accepted by company)	March 4, 1854	1854 Ch. 33
7.	Root R. Valley & Southern Minn.	March 2, 1855	1855 Ch. 24
8.	Transit	March 3, 1855	1855 Ch. 27
9.	Winona & LaCrosse	Feb. 5, 1856	1856 Ch. 159
10.	Minneapolis & St. Cloud	March 1, 1856	1856 Ch. 160
11.	Minneapolis & Cedar Valley	March 1, 1856	1856 Ch. 166
12.	Lake Sup. & Northern Pacific	March 1, 1856	1856 Ch. 158* p. 301
13.	Mississippi & Missouri	March 1, 1856	1856 Ch. 163
14.	Northern Pacific	March 1, 1856	1856 Ch. 165
15.	Lake Superior & Central Minn.	March 1, 1856	1856 Ch. 158* p. 280
16.	Hastings, Minn. R. & Red R. of the North	Feb. 20, 1857	1857 Ch. 39
17.	Nininger, St. Peter & Western	March 4, 1857	1857 Ch. 7
18.	Minn. & Dakota	March 4, 1857	1857 Ch. 24
19.	St. Paul & Taylors Falls	March 7, 1857	1857 Ch. 17
20.	Minn. Air Line	May 22, 1857	1857 Ex. Ses. Ch. 71
21.	Minn. & Pacific	May 22, 1857	1857 Ex. Ses. Ch. 1
22.	Mississippi Valley	May 22, 1857	1857 Ex. Ses. Ch. 27
23.	Lake Sup. & Crow Wing	May 23, 1857	1857 Ex. Ses. Ch. 74

*Two chapters are numbered the same

No.	Name of Co.	Date	Citation, Session Laws of Minn.
24.	Mississippi R. Branch	May 23, 1857	1857 Ex. Ses. Ch. 53
25.	Minn. & Northwestern	May 23, 1857	1857 Ex. Ses. Ch. 49
26.	Minn. Central	May 23, 1857	1857 Ex. Ses. Ch. 2
27.	Neb. & Lake Sup	May 23, 1857	1857 Ex. Ses. Ch. 93
	(Minn. Improvement Co. authorized to build a railroad)	May23, 1857	1857 Ex. Ses. Ch. 56

These charters for convenience in reference are numbered in the order of their approval. Where several charters were granted the same day the order is arbitrary.

Number 27 is not included in the list of railroad companies chartered by the territorial legislature, given by the railroad commissioner in his report in 1871.[87] But as it was accepted by the company[88] and later "amended and continued"[89] there is no reason for excluding it.

These territorial charters form an interesting compariative study. A uniform incorporation law would have worked no hardship on any of the companies incorporated, for all were to be built and operated under very similar conditions, and though conditions may have been somewhat different an examination of the charters will reveal few variations which can be traced to any such legislative forethought. The form of the charter, as well as its contents, was in the main determined by the railroad promoter, for whom the varied charters of the other states served as models, and not by the legislature. The charter proposed by the promoter, sometimes amended to be sure, became the charter of the railroad company. For this reason we find that charters passed during the same session and often on the same day, are quite dissimilar.

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(87) Report of the Railroad Com. (Minn.) for the year 1871, p. 5
(88) Records in the office of the Secretary of State
(89) Special Laws of Minn., 1861, Ch. 1

Though very dissimilar in many respects, the general plan of the charters is much the same in all. In all but two[90] the named incorporators, their successors and assigns are declared to be a body corporate with usual corporate powers. A part or all of these incorporators are to constitute a board of commissioners, under whose direction subscriptions may be received after due announcements. A certain amount of cash is to be paid down on each share subscribed for and after a specified amount of stock is subscribed and cash paid in the commissioners are to call a meeting of stockholders for the purpose of organizing. A board of directors is to be elected. Every share entitles its holder to one vote, and stockholders may vote by proxy. The directors are, as a rule, given quite unrestricted powers. They are to manage the affairs of the company and make all needful rules and regulations—the provision "not inconsistent with the constitution of the United States or with the laws of this territory" is frequently added. The directors are authorized to make "calls" on unpaid subscriptions—maximum amount usually stated—and noncompliance, in all but three cases, involves forfeiture. The amount of capital stock is fixed, but generally an upper limit is mentioned to which it may be raised by the directors with the consent of the majority of the stock.

Right of way is given through private and public property and across streams, public and private roads, and highways. Additional lands may also be acquired when necessary for railroad purposes. In cases of expropriation methods of settlement are in all cases designated. The usefulness of roads and streams is not to be essentially impaired.

Nearly all the charters provide for connecting and uniting and some also for consolidation with other rail-

(90) Nos. 18 and 23

road companies. The power to borrow money, give security and issue bonds is quite generally given. Penalties are imposed for damaging or obstructing the railroads. There is always a time limit set for completing at least a part of the projected railroad and often also for organizing the company and beginning work. More than half of the charters are declared to be public acts, and in most of them provisions are made for amendment by the legislature.

This is in short the outline of the normal Minnesota railroad charter. The plank road and canal charters follow much the same plan. But the provisions in respect to these different general features vary considerably, both as to wording and content, while numerous special features are brought in. Some, however, have many provisions in common, with many sections verbatim alike, and in a few instances whole charters are almost identical. With few exceptions the charters may be placed in groups, but within these groups again some may in turn resemble each other more closely than others. Numbers 5, 11, 20, 24 and 25 may be said to constitute one such group. Number 5 differs from the others mainly in providing different expropriation proceedings. Sections 6-15 inclusive, of number 11, are "adapted and enacted as parts" of number 24, "to be known and numbered as therein known and numbered." Numbers 5 and 11 name the commissioners who are to open books, while the others make this the duty of the incorporators or a part of them. The general trend of these charters is like some of those granted by Wisconsin. The right of way proceedings of all but number 5 are verbatim like those found in an amendment to the Madison & Beloit railroad charter.[91] The provision as to borrowing money and issuing bonds which may be exchanged for stock, as the directors may provide, is much like section 16 of the Ohio

(91) Laws of Wisconsin, 1851, p. 203

and Mississippi railroad charter of Illinois, and numbers 11, 24 and 25 have similar provisions also as to uniting and connecting with other roads.[92]

Numbers 18 and 23 are very similar, and with these might be placed the railroad franchises given the Minnesota Improvement company, but these do not appear to have been made use of. These two charters appoint the named persons commissioners, under the majority of whom subscriptions may be received; when the stockholders organize they are to become a body corporate. These charters can easily be traced to Wisconsin. Most of their provisions may be found almost verbatim in such charters as those of the Lake Michigan and Mississippi,[93] Madison and Swan Lake,[94] La Crosse and Milwaukee,[95] Racine, Janesville and Miss.,[96] railroad companies, incorporated by that state. The fifty year corporation life limit is, however, not found in the Wisconsin charters. The first plank road charter granted in Minnesota[97] may also be traced to the same source.

Another group is numbers 12, 14, and 15 and with these may also be placed numbers 2 and 4. Number 2 is very similar to the Beloit & Madison[98] railroad charter. Number 4 is almost verbatim, like that of the New Haven & Monroeville railroad company, chartered by Ohio.[99] The provision limiting the bond issue to three-fourths of the amount actually expended may be traced to an amendment of the Madison & Beloit[100] charter.

The right to reciprocal use of railroads at connecting points is like sec. 23 of the Northwestern charter.[101] Judg-

(92) Private Laws of Illinois, 1851, p. 89
(93) Laws of Wis., 1847, p. 72
(94) Laws of Wis., 1851, p. 172
(95) Laws of Wis., 1852, p. 325
(96) Laws of Wis., 1852, p. 591
(97) Laws of Minn., 1849, p. 91
(98) Laws of the State of Wis., 1848, p. 161
(99) Local Laws of Ohio, 1836, page 357
(100) Laws of Wis., 1851, p. 203
(101) Laws of Wis., 1852, p. 646

ing from internal evidence it would seem that number 4 came directly from Ohio, while the others came by way of Wisconsin.

The largest group is that which comprises numbers 7, 8, 9, 10, 13, 16, 19, 26, 27 and perhaps also numbers 6 and 17. The Transit charter of 1854, which was not accepted, would have belonged to this group. Number 6 is derived quite directly from the Illinois Central charter.[102] Governor Gorman characterized it as substantially like the Illinois Central except that it left out nearly, if not quite, all the guards and securities expressly provided for in the Illinois charter.[103] In their efforts to float capital into the country to undertake railroad construction in advance of the economic needs, frontier railroad legislation nearly always had a tendency to be very liberal. The provisions of the charters of this group may nearly all be derived from Illinois charters, especially from the Illinois Central. The provisions concerning bell or whistle, railroad crossing signs, badges to be worn by trainmen, and fencing are similar to those found in Illinois, which in turn derived them from New York charters. Such regulations were not so frequent in Wisconsin and Ohio charters. It may be of interest to note that the charter incorporating the Minnesota Point Ship Canal Company[104] betrays a common origin with this group.

Numbers 1, 3, 21 and 22 do not resemble each other particularly, nor do they fit into any of the foregoing groups. Number 1 is in many respects very similar to the Wellsville & Pittsburgh railway charter[105] granted by Ohio, and also to the Dayton & Western[106] charter of the same state. The provision authorizing the borrowing of

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(102) Private Laws of Ills., 1851, p. 61
(103) Council Journal, 1855, p. 122
(104) Laws of Minn., Ex. Ses., 1857, Ch. 75
(105) Local Laws of Ohio, 1846-7, p. 183
(106) Ibid., p. 93

money resembles an act authorizing the Mad River & Lake Erie railroad company[107] to borrow money.

In number 3 we find the first twelve sections practically verbatim like those of the charter of the Alton & Springfield railroad[108] granted by the Illinois legislature in 1847 and some of the remaining sections also similar. One peculiarity of this charter is that it provides that in expropriation land shall be taken "as provided by the act (of congress) concerning right of way approved March 3, 1845." The words "of congress" were inserted in brackets by way of explanation, but are misleading. Congress passed no such act on that day. The act cited is an act of the legislature of Illinois,[109] and was referred to in the Illinois charter; this provision was copied in the Minnesota charter together with the rest.

Number 22 may be traced to Wisconsin. It bears a strong resemblance to the Northwestern[110] and the Beloit & Madison[111] charters of that state.

The provisions of number 21 are mostly derived from Wisconsin. The first part resembles some Illinois charters[112] but the main provisions may be found in the Arena & Dubuque[113] charter and the land grant charters and enactments of Wisconsin in 1856.[114] Likewise the other land grant enactments of Minnesota in 1857 may also be traced directly to this source. The general railroad incorporation law of 1858 is from beginning to end almost verbatim like that of Ohio.[115]

It would be difficult in most instances to point out with any degree of certainty the exact charters which served as models for those of Minnesota. The similarity may

(107) Local Laws of Ohio, 1846, p. 27
(108) Private Laws of Ills., 1847, p. 144
(109) General Laws of Ills., 1845, Ch. 92, p. 478
Approved March 3, 1845
(110) Laws of Wisconsin, 1852, p. 646
(111) Ibid., p. 55
(112) Private Laws of Ills., 1849, p. 78; 1851, p. 61
(113) Gen. Laws of Wis., 1856, p. 680
(114) Ibid., p. 239, Ch. 137; p. 217, Ch. 122
(115) Revised Laws of Ohio, 1854, Ch. 29, p. 191

in some cases merely indicate a common origin. I think it quite safe to say that Minnesota got nearly all her charter provisions from Ohio, Wisconsin and Illinois, especially from the two latter. A few scattered provisions may have been taken directly from New York, Pennsylvania or New England charters. It is but natural that railroad promoters in a frontier territory like Minnesota should look to the neighboring states, in which railroads were developing under very much the same conditions, for charter models.

The length of the charters varies from twelve to thirty-three sections, (Numbers 17 and 22), and these two were passed in different sessions of the same year. The number of incorporators varies from eight to twenty-six (Numbers 8 and 27). The number of incorporators, however, plays no important part. M. A. Gorman, on the floor of the constitutional convention in 1857, said that many were included merely for the purpose of organizing the company and never owned any stock at all.[116] Mr. Meeker added that probably one-half the names mentioned in the acts granting charters are of persons who are not even aware that such charters are in existence.[117] In 1853 when the bill to incorporate the St. Paul & St. Anthony Railroad Company (C. F. No. 7) was before the house it was moved in the committee of the whole to amend the bill by adding to the list of incorporators four new names and the names of the members of the legislative assembly.[118] This amendment, however, was not accepted by the council. But seven new incorporators were inserted by the house in the bill to incorporate the Louisiana & Minnesota (No. 6 C. F.), and the council accepted the amendment.[119] In the Minnesota & Northwestern charter the names of Governor Gorman and Secretary Rosser

(116) Const. Debates. Reported by Francis H. Smith, p. 225
(117) Ibid., p. 225
(118) House Journal, 1853, p. 138
(119) Ibid., p. 137

"were inserted without being consulted on the subject and both gentlemen were desirous that their names should not be used in connection with any act of the legislature of this character."[120] This is indicative of the loose methods of legislation in vogue at the time. The incorporators were in no way responsible for the debts incurred. The system was vicious and would not be tolerated anywhere but in a frontier settlement.

The number to constitute the board of commissioners varies and is often quite indefinite. In some cases all the incorporators or a majority of them are authorized to open books. In two charters (Numbers 5 and 11) certain of the incorporators are named as commissioners. The method most frequently provided is for the incorporators to appoint three of their number to serve in this capacity. Two charters (Numbers 18 and 23) begin by naming the commissioners "under a majority of whom subscriptions may be received to the capital stock of the railroad company hereby incorporated." Ten charters[121] provide for the meeting and acceptance of the charters on the part of the incorporators.

The amount of capital stock varies greatly and not entirely with the length of the road proposed. The lowest is $400,000 and the highest $50,000,000 with the privilege of raising it to $100,000,000. The last is quite remarkable for a territory having taxable property listed at less than two and a half million dollars. The legislators seem to have been guided by no economic principle as to stock issue. It appears that neither they nor the promoters had any definite idea of the amount of capital necessary to carry out the enterprise, but some and generally an ample amount was allowed as a matter of course to get the work started. The charter of the Minnesota & Northwestern[122] was, however, an exception. It provided that the

(120) Council Journal, 1855, p. 212
(121) Nos. 6, 7, 8, 9, 13, 16, 19, 22, 26, 27
(122) No. 6

capital stock of that corporation should be $10,000,000, which might be increased from time to time to any sum not exceeding the entire amount expended on the road. This is an approach to capital stock regulation, but would most likely not be very effective in practice. Too much depended on the mere assertion of the company. Mr. A. J. Edgerton, the railroad commissioner, in his report for the year 1873 says: "The stock in nearly all the companies has been issued as a matter of accommodation either connected with transfers or in negotiating bonds. In only a very few companies does capital stock represent any money paid into the company. In some instances the original projectors, or localities interested, subscribed and paid for a certain amount of stock, but generally this stock was wiped out by subsequent purchases of the road by issuing another class of stock. The complaint against watering stock hardly applies to railroads in this state from the fact that, in most instances, stock was issued without any cash equivalent, and representing no material assets, and consequently was hardly susceptible of dilution. The volume might be increased from time to time, but the consistency remained the same."[123] Legislation regarding capitalization was lax in territorial days and from the above report it would seem that it continued lax for some time after. With two exceptions (Numbers 7 and 13) shares of the capital stock were one hundred dollars each. Two charters (Numbers 11 and 24) authorized counties, cities and towns along railroad lines to buy stock and issue bonds in payment, when so decided by majority vote.

We find eleven charters[124] which contain the provision that shares shall be deemed personal property. This was common in railroad charters and in general incorporation laws of the time. The provision was found in an amendment to a turnpike charter in Massachusetts as early as

(123) Ex. Docs. 1873, Vol. II, p. 132
(124) Nos. 5, 6, 10, 11, 13, 19, 20, 21, 24. 25, 27

1796.[125] It had been incorporated into the Minnesota & Northwestern charter (No. 6)and when this charter was exposed to its fiery ordeal, this point was taken up for discussion. It was objected to because if shares were deemed personal property the stock could only be taxed where the owners resided. When Governor Gorman vetoed an act to amend the charter (No. 5 H. F.) he stated in his objections: "It is clear that this provision was to avoid taxation in Minnesota. I cannot therefore let go our right to tax their capital stock and all their property, real and personal."[126] This and other objections were given, but they seemed to have little weight as far as this bill was concerned, for it passed both houses easily by the required two-thirds majority and became a law.[127] But two new charters granted this year (Numbers 7 and 8) had both been amended by striking out this clause.[128]

The amount of capital stock which must be subscribed before the stockholders could meet and organize varies greatly, not only in amount, but also in per cent of the total capital stock. One charter (Number 17) provides that $500,000 must be subscribed and five per cent paid down in cash; the amount of capital stock is to be $2,000,000. Another charter (Number 20) granted at an extra session the same year only requires that "a sum not more than $50,000 shall have been subscribed to the capital stock," which in this case is to be $5,000,000. This last was indeed a chance for the railroad promoter to begin work with little capital.

The maximum "call" for payment on capital stock is in three charters (Numbers 1, 6, 21) placed at the discretion of the directors; two charters (Numbers 3, 17) have no provisions at all concerning this matter; in one (Number 20) the maximum call is five per cent per

(125) Laws of Mass., 1796, Ch. 5, p. 8
(126) Council Journal, 1855, p. 126
(127) Ibid., p. 133
(128) House Journal, 1855, No. 48, H. F., p. 298; No. 5 C. F., p. 296

month. In the remaining charters the call varies,—from ten to twenty-five, five to twenty and ten per cent are the most common. In three charters (Numbers 1, 6, 21) it is provided that when installments are not paid, stock may be sold at auction, and the balance which may be left shall be paid over to the owner. The other charters all provide for forfeiture of stock on non-payment, due notice to be given in all cases.

Each share entitled the owner to one vote which he might exercise in person or by proxy. In some cases it is provided that only shares with paid-up installments entitle the holder to votes. The directors are to be elected by majority vote. In only one charter (Number 22) is there any irregularity in these respects. By this charter the land grant companies are authorized to subscribe to the capital stock in proportion to the length and cost of the roads built by each. The directors of the new company are to be elected from the different companies which are stockholders in proportion to the amount of stock held, but whenever individual subscriptions amount to $200,000, such stockholders shall be entitled to one director and on larger subscriptions in like proportion.

The number of directors varies from five to fifteen and in some cases where the companies are authorized to consolidate the new board of directors is not to exceed twenty-one. Twelve and nine are the most common numbers. Seven[129] provide for a board of twelve directors who are to be divided into three classes, each class holding office for one, two and three years respectively. After the first election four new directors are to be elected annually for a term of three years. In other charters all the directors are elected annually. Directors are to be chosen from the stockholders. One charter (Number 6) provides that all must be citizens of the United States and three of them residents of Minnesota; another (Number 14) that one

(129) Nos. 6, 8, 9, 10, 13, 16, 19

must be a resident of Minnesota; a third (Number 27) that three must be residents of Minnesota; and a fourth (Number 21) that a majority of the board of directors must be citizens of Minnesota. One charter (Number 7) does not mention the election of directors at all.

Nearly all the charters provide that the directors may establish and collect such "tolls" or rates as they may deem reasonable. One charter, however, (Number 5) sets the maximum passenger rate at four cents per mile. An amendment to another[130] sets the maximum rate at ten per cent above the rate charged by the Illinois Central. Rates were what would induce capital to build and invest and it was but natural that the legislature at the time should be liberal.

The right of way is in all cases granted the railroad companies. The width of the right of way varies. Out of the twenty-seven charters, eight[131] provide that land may be taken, not exceeding one hundred feet in width; one (Number 2) sets the maximum at one hundred and thirty feet except where more is necessary for turnouts, buildings and the like; another (Number 17) at one hundred and fifty. In two there is no definite limit set, one (Number 1) authorizing the company to "enter upon any land, to survey, construct and lay down said road," not mentioning width at all, the other (Number 3) authorizing the company to lay out their road wide enough for a double track. The remaining fifteen provide that the companies may appropriate to their own use and control for the purpose of the railroad and its appurtenances, land not exceeding two hundred feet in width. In the second report of the industrial commission it is stated, "In California the unusual liberty of laying out its road not exceeding nine rods wide is given the company."[132] In Minnesota it was quite usual to authorize two hundred feet or over

(130) To No. 6. Laws of Minn., 1855, p. 67
(131) Nos. 4, 12, 14, 15, 18, 22, 23, 25
(132) House Docs. 57th Cong. 1st Session, Vol 72, p. 896

twelve rods. Previous to 1855 the territory had no authority to grant right of way through public domain. Governor Gorman called attention to this fact in his message that year[133] just before congress extended this right, which had for some time been enjoyed by states,[134] also to territories.[135]

The method of effecting a settlement for lands taken for right of way or for other "necessary purposes" where the owner was absent, incapable of conveying, or unwilling to agree, varied considerably. One charter (Number 5) provided that in such cases a jury of twelve men should be summoned and sworn by a justice of the peace to ascertain the value of the land taken. Another (Number 1) provided that the district judge, or two justices of the peace, were to issue warrants to the sheriff or marshall of the county to summon three disinterested freeholders to arbitrate for the compensation to be awarded. In four charters (Numbers 4, 12, 14, 15) the company and the land owners or their representatives are each to appoint an arbitrator and these in turn to appoint a third and then proceed to estimate the value of the property taken or the amount of damages sustained. But if owners do not agree to arbitrate (Not in No. 4), the company may petition the circuit, district or county court for the appointment of these commissioners. The remaining charters provide for the appointment of three commissioners by some court or judge. In seven[136] the appointment is to take place on the application of the railroad company, in one (Number 22) on application of either dissatisfied party. One charter (Number 3) provides for such appointment only in cases where owners are absentees or incapable of conveying their lands, "according

(133) Council Journal, 1855, p. 125
(134) 10 U. S. Stat. 28
(135) 10 U. S. Stat. 683
(136) Nos. 1, 2, 11, 20, 21, 24, 25

to act (of congress) concerning right of way approved March 3, 1845." (See supra. page 151.)

In the remaining charters[137] the three commissioners are to be appointed on a signed petition of the company definitely stating what lands are to be taken, and after publishing the fact for a certain length of time. The commissioners appointed are to be from the county in which the property lies. In nearly all charters it is provided that in estimating the value of the land taken and the damages sustained, the advantages as well as disadvantages to the owners are to be taken into account and some as a precaution add that in no case shall a balance be awarded the company.

Most of the charters provide among the enumerated corporate rights that the company may acquire, convey, and possess such real and personal property as may be necessary to carry on its business. The charters seem to imply that an effort shall first be made to acquire the right of way and other necessary lands by purchase or otherwise before resorting to expropriation. No. 21 is an exception.

Some charters state definitely that only an easement is acquired on expropriation. In one charter, however, (Number 3, section 7) there can be no doubt that the intention was to convey in fee simple. In another the idea seems to be the same: "and whenever the amount of such award or judgment shall be tendered or deposited as aforesaid, an absolute estate in fee simple in such lands shall be and become vested in said company." (Number 21, section 13). A third provides that on expropriation and settlement the company shall have the "same right to take, own and possess said lands and material as fully and absolutely as if the same had been granted and conveyed to said company by deed." (Number 5, section 10).

In other charters the wording is more indefinite.

(137) Nos. 6, 7, 8, 9, 10, 13, 16, 17, 18, 19, 23, 26, 27

Number 7, (section 7) provides that "the said corporation shall upon payment to each party interested * * * become invested and seized of the title of the lands or real estate * * * and entitled to the full, free and perfect use and occupation of the same for the purposes aforesaid which are, for all the objects of this act, hereby declared to be public purposes." Thirteen[138] charters give free right of way through territorial or future state lands "to be held and possessed so long as the same shall be used for such purposes." All but four of these (Numbers 1, 6, 19, 21) expressly exempt free right of way through schools lands. Sections 16 and 36 of every township had been reserved for school purposes by the act of congress organizing the territory. For right of way through these lands the company must pay not less than one dollar and twenty-five cents per acre as determined by the legislature, the proceeds going to the school fund.

Federal land grants figured largely in the hopes of the territory in securing railroads. The population and wealth of the territory did not warrant railroad construction on any large scale and railroad systems were deemed to be essential to the development of the natural resources. One of the first charters granted provided that the "fee simple of all lands granted along the said railroad or otherwise by the congress of the United States for the purpose of aiding said road, may be directly granted to said company and shall be vested in or transferred to said company." (Number 2, section 18). Four other charters have like provisions. (Numbers 12, 14, 15, 16). The charter granted to the Minnesota & Northwestern (Number 6) makes the provision stronger. The future land grants "are hereby granted in fee simple, absolute and without any further act or deed." Number 5 is authorized to "accept and hold to its use any grant, gift, loan or power of franchise which may be granted to or conferred upon said

(138) Nos. 1, 6, 7, 8, 9, 13, 16, 17, 18, 19, 21, 23, 26, 27

company by the laws of any state, or of the United States or by any person or persons upon such terms and conditions as may be imposed."

The Minnesota & Pacific (Number 21) was given a part of the federal land grant of 1857[139] in its original charter. Three others (Numbers 7, 8 and 11) by special enactments also received parts of this same grant. No mention of land grants had been made in their original charters. These grants were to accrue to the companies proportionately on the completion of every twenty miles of railroad.

Most of the charters provide for connecting, while many provide for leasing, purchase and reciprocal use at connecting points, or consolidation. The charters do not indicate any general fear of monopoly. One of the last special charters granted (Number 25) provides that the company "shall have the power to unite its railway with any other railway now constructed or which may hereafter be constructed in this territory, or adjoining states or territories, upon such terms as are mutually satisfactory between the companies connecting * * and shall have the power to consolidate its stock with any other company or companies."

Six charters[140] provided for "reciprocal use of said respective roads" where the roads connect and in case of disagreement as to terms either party might appeal to the supreme court of the territory "whose duty it shall be to fix such terms for the respective parties as may be equitable." Others simply provide for mutual agreement. Five[141] charters authorized the consolidation of stock, change of name, and new joint board of directors not to exceed twenty-one in number. In some charters consolidation or connection with certain named companies is authorized.

(139) 11 U. S. Stats., 195
(140) Nos. 2, 12, 14, 15, 22, 27
(141) Nos. 12, 14, 15, 22, 27

Only a few charters contain any provisions concerning taxation. Where no special mention or exemption was made they would be taxed as other corporations on their capital stock and all their property both real and personal.[142] A special form of taxation, however, grew up in connection with federal land grants in aid of railroads. The Illinois Central was paying seven per cent of its gross income into the state treasury. It was believed in Minnesota also that the territory ought to secure a "fair resulting interest" before she parted with the federal grants. They might "secure sufficient interest to pay all the taxes of the territory or future state, if that direction be advisable, for half a century or more to come."[143] All that the charter of the Minnesota & Northwestern secured, however, was seven per cent of the net earnings to be paid in semi-annually after the company cleared twenty per cent. If number 12 got land grant aid the territory or future state was to have a "suitable resulting interest" in the lands and one per cent annually of the net proceeds of the road. Numbers 14, 15 and 16 simply provide for a "suitable resulting interest" in proportion to the quantity of land granted and the length of the road in the territory or future state. Number 21 and enactments giving land grants to Numbers 7, 8 and 11 provide that in consideration of grants, privileges and franchises granted, the companies shall pay three per cent of their gross earnings annually in lieu of all taxes and assessments whatever, and the lands granted are to be exempt from taxation till sold or conveyed.

Charters and enactments having provisions concerning federal land grants usually provide as to carrying United States mail and such freight and passengers as may be offered by the government. This was in accordance with conditions imposed in the federal land grant acts. Two

(142) Council Journal, 1855, p. 126
(143) Council Journal, 1855, p. 36

charters (Numbers 17 and 22) have such provisions though no promise is made of land grants.

Some charters provide for publicity of accounts. Numbers 6, 11, 20 and 24 demand that full and correct accounts of the financial condition of the companies be published annually. Number 6 provided that the charter would be null and void if this annual report were not made to the governor. The others had no provisions to enforce such publicity. With the land grant and gross income per centum enactments of 1857[144] provisions were made to secure the territory its dues. The governor, or other duly appointed person, was authorized to inspect the books and papers of the companies and to examine their officers, agents and employees under oath to ascertain the truth of their accounts.

Powers granted to borrow money and issue bonds are very liberal. The minimum bond denomination is usually set at five hundred dollars. This was no doubt to insure against railroad bonds being issued and used as currency. Number 6 provides, as so many charters of other states had done, that "no banking privileges are hereby granted said company."

The first charter granted (Number 1) authorized the company to borrow any amount of money not exceeding $200,000 and to issue bonds in convenient amounts not less than one hundred dollars each. Seven charters[145] limit the bond issue to three-fourths of the whole amount actually expended on the "road and its appendages" at the time of its completion. Several charters authorize the companies to borrow on such terms and rates of interest as they can. Number 21 expressly provides "any law on the subject of usury in this territory or future state or any state where such transaction may be made, to the contrary notwithstanding."

(144) Laws of Minn., 1857, Ex. Ses., Ch. 1
(145) Nos. 2, 10, 12, 14, 15, 16, 27

All the charters excepting Numbers 12, 14 and 15 provided penalties for damaging and obstructing the railroads. If these provisions had all been carried out, similar offences would have been punishable in many different ways. To illustrate, if the damage were done to the Minnesota Western (Number 2) the guilty person would be liable to treble the damages to be recovered in civil action; but if done to the Louisiana & Minnesota (Number 2) chartered two days later, he must forfeit treble damages and is furthermore guilty of a misdemeanor and on indictment and conviction is liable to a fine not exceeding $5,000 for the use of the county. If the damage were done to the Minnesota & Northwestern (Number 6) he must pay treble damages to the company and "shall be imprisoned until payment thereof unless sooner discharged by due proceedings of law;" he is further subject to indictment and may be fined from $30.00 to $1,000 "to the use of the territory or future state" or may be "imprisoned in the penitentiary or jail for a term not exceeding five years" in the discretion of the court. The St. Paul & Taylors Falls charter (Number 19) provides for double damages to be paid to the company, the offender is furthermore guilty of a misdemeanor and on conviction must serve from five to ten years in the territorial prison, and in case of death resulting from his misdeed he is to be held guilty of murder in the second degree. These are a few of the many different provisions. This great discrepancy is due almost entirely to the use of different models in drawing up the charters.

There are time limits set in all the charters. The time for beginning work ranges from two to five years. Number 9 sets the time at ten years, but from the context this must be a misprint. Five charters[146] provide for completion in ten years. Most of them provide for the building of certain of the more important parts within a specified

(146) Nos. 4, 5, 9, 20, 21

time. Two companies (Numbers 2 and 10) are permitted to build their roads in sections. Some of the charters provide that the grants and franchises are null and void if the companies do not comply with the time requirements. Number 13 provides that a failure to comply with any of the requirements of that charter shall forfeit all the charter rights and privileges. Similarly numbers 12, 14 and 15 make compliance with all terms and conditions, the conditions of the charter remaining in force "for the full term of fifty years." These are the only companies whose charters are not perpetual and this provision is not found in the models from which they were drawn up. In 1853 we find that the committee on internal improvements recommended that the charter privileges asked for the Mississippi & Lake Superior (Number 4) be granted for the period of fifty years,[147] but this recommendation was not acted upon. In a message to the legislature in 1855 the governor said: "The modern doctrine is now well understood among public men, that no corporation for the concentration of large capital should have perpetual and unalterable charters and in most New England states this guard is reserved to the people as it rightfully ought to be." The three charters out of the seven granted the following year were thus limited.

Fourteen charters[148] provide for amendment. The charters granted in 1853 provide that the legislature may alter or amend, or alter, amend or repeal. Number 7 provides that any subsequent legislature may amend "in any manner." The Transit (Number 8) is the first one that provides that the amendment is not to "destroy or impair vested rights" and this provision is found in all charters following that make any mention of amendment at all.

The house amended the bill to charter the Transit Railroad Company by striking out this clause,[149] but the

(147) Council Journal, 1853, p. 43
(148) Nos. 1, 2, 3, 4, 7, 8, 9, 10, 11, 13, 19, 25, 26, 27
(149) House Journal, 1855, p. 297

council did not concur and the provision remained. Number 6 made no mention of amendment, but in the amendment to this charter the following year it was specified that the "legislature may repeal, amend or modify—after the expiration of twenty years, provided that compensation be made said company for all damages sustained thereby."

A number of the charters contain general provisions. In the Minnesota & Pacific charter (Number 21) section 27 establishes a uniform gauge of four feet eight and a half inches for all railroads in the territory. In the Minnesota & Northwestern it was provided that if the charters were not accepted by the named incorporators any other company approved by the governor and treasurer of the territory might accept and be vested with their rights and subject to the liabilities set forth in the charter. In a rider to number 7 a county is organized and its government provided for and the county seat of another county is fixed. Reciprocal rights with connecting roads are provided for in some charters.

Fifteen[150] of the charters provide that "this act is hereby declared to be a public act." It is a question whether this was done consciously to secure the right to amend. It was most likely done merely in imitation of railroad charters of other states. Though declared a "public act," the Louisiana & Minnesota charter (Number 3) is found with the other railroad charters, not so declared, among the private acts in the collated statutes of Minnesota, 1853.

The charters were all very liberal to the corporations, as the earlier charters of other states had been. The later experience of neighboring states, though at times made use of, was not thoroughly incorporated into the charters. Many restrictive provisions are found, but the means of enforcing them are generally quite wanting. Railroad problems were not understood in advance of actual experience.

(150) Nos. 3, 6, 7, 8, 9, 10, 11, 13, 19, 21, 22, 23, 25, 26, 27

Third Session

WHAT HAS MINNESOTA DONE WITH HER HERITAGE?

THE POLICY OF THE STATE REGARDING TIMBER LANDS

By G. O. Brohough

The lake region, including Michigan, Wisconsin, and Minnesota, was the home of the white pine. Probably nowhere else in the world is there such a continuous area of timber-land so immense, so accessible, so easy to lumber, and so valuable as the great woods that took its rise in the eastern part of Michigan, stretching westward to the western part of Minnesota. It has been estimated that the original stand of white and red pine alone in this region amounted to not less than 350 billion feet, board measure. Of this vast amount, Michigan had 150,000,000,000; Wisconsin, 130,000,000,000; and Minnesota, 70,000,000,000 feet. These figures are not too high. The census estimates of the stand of white pine have been usually too low. The estimate in 1880 for Minnesota, for example, was only 8,170,000,000 feet; while more than four times that quantity has since been taken from her forests, and Minnesota is yet furnishing over one-third of the white pine cut in the United States.

Over one-half of the state was originally covered with forests, but only about 18,000,000 acres of this was pine land. Forest Inspector R. S. Kellogg, in circular 97, estimates the amount of timber cut in Minnesota from 1880 to 1906 at 38,000,000,000 feet, or an annual cut of a billion and a half feet. This, no doubt, is conservative. The state forestry commissioner says: "My first visit to the pine forests of Minnesota was in the autumn of 1856. Logging was going on then and has been for sixty years. Probably sixty-five billion feet of pine has

been cut in Minnesota of the value, as it stood in the forest, of $200,000,000." At present retail prices of clear white-pine lumber the above valuation would reach the enormous sum of $3,250,000,000. By an official count in 1895, ordered by the legislature, it was found that in the twenty-three forest counties of the state there was standing 20,000,000,000 feet of pine on about eleven million acres. It has since been admitted that this estimate was 50 per cent too low; and a well known Minneapolis lumberman, after spending $75,000 in looking over the field, recently gave it as his opinion that there was yet forty billion feet of white and Norway pine standing in Minnesota. This seems like a promising, even astonishing growth, as the United States authorities declared that there was only the modest amount of eight billion feet of pine standing in Minnesota in 1880.

Of course, all of the timber lands in the state originally belonged to the United States. Large areas, however, have come into the possession of the commonwealth, first as a birthday gift, and later as outright donations. Minnesota was the second state in the Union to receive two sections of land in every township for educational purposes. This alone amounts to one-eighteenth of all the public land within her borders. She also received one hundred and forty-four sections for a state university, ten sections for public buildings, all the salt springs in the state, not exceeding twelve in number, with six sections of land adjoining each, besides swamp lands amounting to 4,330,099.65 acres.

What has the state of Minnesota done with that portion of this princely heritage which was covered with forests? What has been the policy of the state regarding timber lands?

In many things the states have modeled after the federal government. If we examine the land policy of the United States we find that no notice is taken of the

immense forest wealth that grew on the public domain. When the first settlers came to this country they brought with them a certain respect for the forests, inculcated by strict laws in the old world. They soon found, however, that the timber was in their way, that the woods sheltered their enemies—the savage beasts and the still more savage men. In order to cultivate the land the forest must be removed; and as there was no market for lumber, the logs were rolled together in heaps and destroyed. In this way it came about, to quote President Roosevelt, that "in the old pioneer days the American had but one thought about a tree, and that was to cut it down." With these facts in mind we are better able to understand the origin of that policy under which an acre of forest land covered with a magnificent stand of white pine worth $100, and an acre of prairie land, worth $1.25, are both sold at the same regulation minimum or double minimum price.

Unlike the United States, the state of Minnesota has taken cognizance of the fact that there are valuable forests, worth millions of dollars, growing on her timber lands. She has taken steps to protect and preserve these forests in order that the income from the annual and emergency sales of reasonable, limited amounts of timber may help fill the coffers of the state's treasury.

The early lawmakers evidently intended to guard against fraud from bidders at the public sales of timber. In the language of the law: "No permit for such cuting shall be granted to any person by said commissioner except upon sale of timber to the highest bidder, at public auction, held at his office at the State Capitol, notice of which shall be given at least sixty days prior to the date of the same, in one or more daily papers published in St. Paul." This method of disposing of the state's timber is called a stumpage sale. The statute regulating these sales was soon found to be very de-

fective, inviting fraud and legal squabbles. The law was amended in 1895 and again in 1905. Of the present form of the law the state auditor says in his last report: "Chapter 204, Gen. Laws 1905, contains many very excellent provisions for protecting the state's interests in our timber business and it is generally satisfactory."

In the case of state school lands, the land and the pine timber are sold separately, according to chapter 40, section 2404, Revised Laws of Minnesota, which reads as follows: "The minimum price of school lands shall be five dollars per acre, and all sales thereof shall be within the county within which said lands are situated; *Provided, that pine lands shall not be sold until the timber thereon has been sold according to the provisions of this chapter;* and, when such timber has been sold and removed, the land may be appraised and sold as in this chapter provided."

The most important step relating to the protection and sale of timber on state lands is the law embodied in chapter 204, General Laws 1905, entitled, An act relating to the sale of timber on state lands, etc. By section 8 of this act, "The auditor may sell the timber on the pine lands in his charge—when authorized to do so by the board of timber commissioners, and not otherwise."

The auditor, in case of sale, issues a permit to the purchaser to cut and remove the timber after it has been appraised, "but no sale shall be made on any estimate or appraisal made more than one year prior thereto."

The board of timber commissioners consists of the governor, treasurer, auditor, and attorney general. They have charge of the sale of timber under the strict regulations of the law. Eight weeks' notice must be published and descriptive lists sent to all applicants. The purchaser must give bonds in double value of timber covered by permit and pay 25 per cent of the appraised value before he is allowed to cut. The logs are scaled by

the surveyor general, who receives payment in form of fees. Trespassers pay "treble damages if such trespass is adjudged to have been wilful, and double damages, only, if casual and involuntary—and every such trespass wilfully committed shall be deemed a felony."

Timber cut or removed by a trespasser belongs to the state, and may be seized and sold at public auction, but such sale does not relieve the trespasser from criminal liability. Rewards are offered for information leading to conviction of persons violating the law. These are some of the most important provisions of this wise and timely statute. It appears that the state has finally waked up to a greater consciousness as to its solemn duty of preserving the forests and has tried to draw a cardinal's protective circle round its precious and princely heritage of pine timber. Had this been done years ago it would have benefited the state's exchequer to the extent of millions of dollars.

The state, however, can only wisely husband, not save, its stand of pine; as the state constitution requires the land to be finally sold. Only by gifts of public lands, private munificence or state purchase can forest preserves be established.

The policy of the state has been *to distribute its forest wealth in a short period of time;* it has done little or nothing for the conservation of its timber resources for the use of future generations.

The only thing worth mentioning that has been done in this line is the establishment, in 1891, of the Itasca State Park, situated mainly in Clearwater county. The park, no doubt, contains some beautiful tracts of timber land, but is too small to have any possible influence on the future output of lumber or to regulate the water flow of the Mississippi. Besides being a pleasure resort, it may serve the useful purpose, however, of show-

ing to future generations what a genuine, wild Minnesota pine tree looked like.

The state also holds two small tracts of land expressly set apart for forestry purposes. The smaller one of these, consisting of nearly 1,000 acres, is located twenty miles northwest of Brainerd. The late Ex-Governor Pillsbury had acquired title to this valuable property in the early days of lumbering; he then cleaned off the timber and donated the cut-over lands to the state of Minnesota. The donation was a generous act. Others, holding cut-over timber lands, were expected to follow his example, but so far they have failed to do so. The state, after taking possession of the land, sent an expert out there, whose duty it was, among other things, to carefully count the pine stumps. The larger tract, called the Burntside forest, and located west of Ely, was granted to the state by congress in 1904. It consists of 20,000 acres of fourth class vacant land, and is to be devoted to experimental forestry. A few pines are still growing in this reserve; but, altogether, it is a sorry specimen of the magnificent white pine forests of northern Minnesota. The tall and stately pines that were "fit to become the masts of some great admiral" have disappeared.

According to records in the state auditor's office the first money for stumpage was paid into the state treasury in 1864, and the amount was $1,101.20. Twenty years later it was $104,729.64; in 1904 receipts had risen to $638,414.42. For timber cut under regular permit $433,361.80 was received for the year ending July, 1905, and $547,114.42 for the year ending July, 1906—a total of $980,476.22 for the two years. In the early days stumpage was low. Even as late as September, 1892, pine stumpage was sold to W. Sauntry for $1.50 per thousand. In 1905 the average price received for pine was $7.80 per thousand feet, and in 1906 it was $9.55

per thousand feet. The total amount received by the state for stumpage from 1864 to 1906 is $5,119,787.08. During the same time $318,767.35 has been collected for trespass on the timber lands of the state.

But what has become of the billions of feet of timber taken from our forests? It has built homes for the millions of actual settlers in this and neighboring states and filled those homes with conveniences and comforts: it has built barns for the shelter of necessary and valuable live stock; it has built granaries bulging with garnered harvests, and it has furnished indispensable raw materials for manufacture and transportation. As the prairie counties were settled and the cities grew the demand for lumber became intense, imperative. Hats off! to the honest and industrious lumberman who supplied this demand. We only regret his methods; they were wasteful in the extreme. Only forty per cent of the trees cut reached the consumer—the rest was left to rot on the ground or to be consumed by the inevitable forest fire. But there are extenuating circumstances connected even with his wasteful methods, for he shared the common opinion that our forest resources were inexhaustible.

Not all the members of the guild need hold up their hands, however, at the roll call of honest dealers. The great number of prosecutions for trespass on state timber land and the hundreds of thousands of dollars ordered by courts of justice to be paid into the state's treasury for the unlawful taking of the seductive pine seem to indicate that not all the lumbermen had attended Sunday school in their youth. The temptation of the dishonest man was great. All chances were in his favor. In case the trespass was not discovered he paid nothing for the timber; if prosecuted he usually paid what the logs were worth or less. True, the law declared for treble damages and misdemeanor in case of wilful trespass and

single damages, only, if it was casual or involuntary. No one bothered about the "misdemeanor" part of the law; and, as for the civil damages, it was as hard for the state to prove that the trespass was wilful as it was easy for the defendant to prove that it was casual and involuntary. For this reason the trespasser paid single damages only, or what the timber was actually worth, and even this price could be considerably reduced by compromise, tactful scaling, intermingling of logs, and other devious methods known to the trade.

What has been said so far in regard to the policy of the state in disposing of its timber has reference to coniferous trees only—such as white pine, Norway pine, jack pine, hemlock, tamerack, spruce, etc. As far as I have been able to learn no provision has ever been made authorizing *hardwood stumpage sales.* Where hardwoods grow the soil is fertile and suitable for cultivation; and it has been the policy of the state to sell the timber and the land together as an inducement to actual settlers. This does not mean, however, that no hardwood stumpage has been sold. For years the practice was kept up in the auditor's office—unwarranted and illegal, of course. Says a committee appointed by the legislature to investigate this and other timber frauds: "We find that thousands of acres of school land, valuable for farming, whose value was greatly enhanced by a thrifty growth of hardwood, suitable for manufacturing purposes and fuel, have been stripped of their timber without authority of law; that no estimate or appraisal has been made, as is provided for the sale of pine timber; that no attempt has been made by our state officials, except in rare instances, to ascertain either the amount or value of such timber before the sale, and but little, if any, attempt to find out whether an honest report of the cutting of such timber was ever made to the state auditor; that when the sale of such hardwood stumpage

was made an arbitrary entry of the amount and value of the same was made in the log record in the auditor's office for the purpose of giving the sale the appearance of legality, and without any intention or expectation of protecting the interests of the state thereby; that by reason of such illegal and unjust methods, which have been practiced for years by our state officials, this committee believes that the school fund of the state has been robbed of hundreds of thousands of dollars' worth of valuable timber, for which no return has ever been made to the state." No hardwood stumpage has been sold since then, as far as I know, and even the last auditor, under whose administration such sales were made, admitted that he found no provision of the statutes authorizing the same. There is probably no diversity of opinion now as to the illegality of hardwood stumpage sales. But what about the sale of pine stumpage that has continued without interruption since the year 1864?

I am so bold as to suggest that it was not the intention of the early legislators to dispose of the state's pine to any great extent by such sales. It may have been their policy to manage the state timber lands according to forestry principles by cutting the ripe timber only and protecting the young growth, thereby creating a source of perpetual income for the school fund; or, which is more likely, they intended that the state forests should be *held* until the timber owned by the United States and private parties had been exhausted, when the state supply would furnish much needed lumber and also bring much higher prices. Listen to the language of the law: "The land commissioner may sell the timber on the pine lands in this state when the same is liable to waste, and not otherwise."

This clause certainly looks very innocent. It was inserted because it was suggested that windfalls and trees injured by fire would decay and become valueless unless

converted into logs. For that reason when in the judgment of a board, consisting of the governor, state auditor and state treasurer, such a condition existed, the stumpage on such tracts might be sold to the highest bidder. "This was opening the door but an inch or two," says one writer, "but a vast army of adventurers, representing every shade of character, from honest enterprise to unmitigated criminality, poured through the opening and became possessed of the great bulk of the pine on our public lands. They violated every restraining provision of the law, and broke every safe-guard; the governor was ignored; lands were sold that were emphatically stated to be in no danger from fire; other pieces were sold at private sale; and still others at public sale, where all competition was prevented by illegal conspiracies and combinations. And so this proviso, which was intended to cover only a few exceptional cases, has been the means of stripping the state of the value of probably the greater portion of its landed possessions."

The statute referred to above, restricting the sale of stumpage to timber liable to waste, has now been changed. By the law of 1905 "The auditor may sell the timber on the pine lands in his charge, when authorized to do so by the timber commissioners, and not otherwise."

It will be seen from the language of this recent provision that the bars are now let down legally and the state auditor by consent of "the board" may sell the state's pine with a good conscience. It will depend largely on their good judgment whether it shall be doled out from year to year or sold off in a rush.

Whatever else may be said of the pioneer settler of this state, he was not economical. The natural resources were free and abundant, and there has been an unseemly haste and scramble to get the lion's share. The fertility of the soil has been greatly reduced and the production

of wheat is constantly pushed farther west, the metallic ores are scooped out with a lavish hand, the buffalo has been slaughtered, and now we see the tail end of the 100 billion feet of timber that but recently grew on the sandy and stony soils, unfit for cultivation. In the Chicago Tribune for November 26, 1908, we read in glaring head lines: "Combine to control Minnesota forests—$20,000,000 syndicate to take over northern lumber districts—the companies control three billion feet of lumber, comprising the biggest tract of white pine left in the world."

In regard to this, the St. Paul Pioneer Press of Nov. 30, makes the following comment: "The bland announcement is made that a lumber deal is near completion by which 'a $20,000,000 syndicate will take control of the pine forests of northern Minnesota.' This invites a renewal of the suggestion that the state of Minnesota itself should assume such control. The state's interest in those forests involves a good deal more than $20,000,000. For their proper administration concerns not merely the husbanding and making permanent of the lumber supply, but also the amount of the rainfall, the conservation of the waters, the preservation of the lakes and rivers, the prevention of drouths at one season and floods at another, and the preservation for useful purposes of millions of acres which, if denuded of forests, will be converted by the washing away of soils into irredeemable wastes. The men who claim the exclusive ownership and control of this, 'the largest body of standing pine left on the surface of the globe,' have not by their past record justified public confidence in the quality of the stewardship they will exercise over the state's interests. The administration of the lands claimed by that $20,000,000 syndicate, and of all other forested areas in Minnesota not belonging to the nation, should be placed under the control of a state forestry commission. The legislature must

choose between establishing such control and handing over to the next generation a vast waste where might have been a permanent wealth-producing forest."

The time has come when all sentiment should be laid aside, and a policy adopted vigorous in protecting and conservative in disposing of the timber yet owned by the state. Efforts should be made especially to build up forest reserves on the headwaters of important streams in order to supply water power for manufacturing purposes, navigable rivers for commerce, and to prevent floods and erosions. The strain of life is constantly growing heavier. Such reserves would afford welcome retreats also for tired and nervous humanity needing rest and recreation.

No such policy can be carried out, however, without the hearty support of public opinion; and to get and maintain this support requires vigorous and unceasing agitation. The difficulties in the way are both many and great. In the language of Mr. Schurz, "It is the short-sighted greed which acts upon the rule to grab all that can be got at the moment, and 'Let the devil take the hindmost,' not stopping to consider that he who does so may be among the hindmost himself, and that in this case his children certainly will be. It is that spirit of levity which teaches to eat and drink and be merry today, unmindful of the reckoning that will come tomorrow. It is the cowardice of the small politician who, instead of studying the best interests of the people, trembles lest doing his full duty may cost him a vote, and who often fears the resentment of the thieves more than that of honest men."

THE POLICY OF THE STATE REGARDING ORE LANDS

By FRANK A. WILDES

The discussion of this subject will necessarily be technical in many parts, and consequently dry. Two obstacles have continually presented themselves. The one, that with dealing with rocks, underground drifts and iron ores, I would have a very prosy subject, and even dull and disinteresting to those not intimately acquainted with the subject-matter; the other in robing statistics in an attractive dress, a wrong impression might be conveyed. After much consideration I have found that in steering clear of Scylla I was most certain to strike Charybdis, so have decided rather "to tire your patience than mislead your sense." In dealing with the subject let it be understood that when the writer discusses what ought to be done by the state in the future, he is speaking for himself and not necessarily voicing the policy of the state auditor, for that official may have plans quite different in purpose.

I will first give a brief history of how the state became possessed of the ore lands, and then outline the system by which the operations are inspected and output checked in order to conserve the best interest of the trust funds, and lastly, I may submit a few new ideas that have suggested themselves to me.

It is quite generally known that the state of Minnesota owns many of the most valuable mines of ore in the state, from which it has derived a goodly sum and which promise to return a greater revenue than that al-

ready derived from all land and timber sales, etc., up to date.

In order that we may fully understand the title by which the state holds these lands and the policy adopted for their control, we should go back and view the history of the several grants whereby the state secured such title.

It will be scarcely necessary to enter into the history and development of the law of uses, trusts and endowments upon which rests the right of an individual or corporation to take and hold property for a specified use and purpose, though they each have an eventful and highly interesting history.

The Puritan's zeal for education was often cooled by a lack of funds to insure efficient schools, hence he was always on the alert to discover some new sources of revenue. The public domain was the natural source, and we are not surprised to find that congress under the articles of confederation provided in the famous ordinance of 1787 for the allotment of lands in the northwest territory for the support of popular education. As the several states were carved out of this territory and erected into states, congress from time to time gave to the new states tracts of public land to be held in trust and used for the cause of public education and other purposes. The organic act of Minnesota, passed March 3rd, 1849, provided in section 18 as follows: "And be it further enacted, That when the lands of said territory shall be surveyed under the authority of the United States, preparatory to bringing the same into market, sections numbered sixteen and thirty-six in each township in said territory shall be and the same are hereby reserved for the purpose of being applied to schools in said territory, and in the state and territories hereafter to be erected out of the same."

The following year the new territory had 6,077 pop-

ulation. The sparseness of settlement and the distance from the east led many members of congress to be generous with the new territory, believing that the land was worthless to the government and might be of some use to the misguided mortals who dared to settle here.

The enabling act of Minnesota, passed February 26th, 1857, made, in section five, four offers to be accepted or rejected by the people in their new constitution.

No. 1—Reaffirmed the tender of sections 16 and 36 in each township, with right to select indemnity lands in other parts of the section should it be found that any lands in these two sections had been previously sold or disposed of.

No. 2—Offered seventy-two sections, to be selected by the governor, for the support of a state university.

No. 3—Offered ten sections to be used in completing public buildings and the erection of others.

No. 4—Offered all salt springs in said state, not exceeding twelve in number, with six sections of land adjoining, or as contiguous as might be to each, to be disposed of as the legislature might direct.

It is quite needless to say that the young state accepted this generous offer and incorporated it in its new constitution, which by so doing bound the state to the federal government by contract.

Not content with this generosity, congress March 12th, 1860, gave to the state all overflowed or submerged lands in the state. Under this grant the state had received by patent up to July 31st, 1906, above 4,330,000 acres. This, with the millions of acres given for schools, etc. constitutes the trust fund lands of Minnesota.

In the early '80's iron ore was discovered in paying quantities in Minnesota, and within twenty years the Minnesota ranges had passed the older Michigan ranges and excited world-wide attention.

The state had selected much of its indemnity lands from the northeastern part of the state in order to secure the pine then covering that area, so that in the later '80's the public officials, in whose custody these lands were, began to study how best to secure a part of this vast mineral wealth for the benefit of these funds. The legislature in 1889 passed a mineral lease law which remained practically unchanged until suspended in 1907. All mineral contracts in existence today are held under lease or contract, provided for by this law.

Briefly the important features of the lease or contract were: a prospecting permit on 160 acres, or less, for one year on payment of $25.00, giving a right to a fifty year contract or lease to the holder, requiring him to pay the state of Minnesota for the proper fund, $100.00 per year until four years after a railroad had been built within one mile of the land. Within the following year he was required to mine 1,000 tons, or pay the royalty of 25 cents per ton on same, and to mine not less than 5,000 tons annually thereafter or pay 25 cents per ton royalty on the same, quarterly.

Under this law the state has issued several hundred leases, or contracts, and has 346 now in force. Of this number more than sixty are within the one mile limit of a railroad and over five years old, and hence are paying minimum royalty. Of the sixty, eleven have forwarded ore to market and three more are preparing to ship the coming season.

A tonnage of 120,000,000 tons of merchantable ore is known to exist on these lands, and it is safe to say that not less than 200,000,000 tons will be shipped from the properties already leased. Enormous tonnages of low grade ores are known to exist on lands on the western Mesaba and Cuyuna ranges that are not included in the above estimate of 120,000,000 tons. Some of this

must be "treated" before the same will become merchantable.

The general policy of the state towards these trust fund lands, and especially the iron ore properties, has been to handle and dispose of them in such a manner as to bring in the greatest possible revenue, taking into consideration the elements of time, markets and liability to loss, etc. For many years after the passage of the mineral lease law, placing the royalty at 25 cents per ton, the contract was a fairly good one for the state, though the minimum output per year was always small as compared with private fee leases. The rapid increase in the demand for iron and steel during the past eight or ten years has greatly increased the demand for ore, and hence the increase in the amount of royalty paid for mining leases. This led the legislature of 1907 to withdraw all state lands from the mineral market.

The policy of the state in dealing with the ore lands under mineral contract, so far as circumstances will allow, is the same as that adopted by the most progressive of the fee owners, but the mineral lands department has been greatly hampered by lack of funds, and hence has not been able to fully equip itself for the most efficient work. A short account of what the most progressive fee owners are doing to conserve their interests in these ore deposits will throw some light upon what good business judgment demands that the state do at an early date.

Private fee owners require that their lessees furnish them with drill and analysis records, and maps showing the developments from time to time. In addition to this they have a complete engineering equipment for mapping and measuring the mine as it is opened up and worked. The locations of all ore bodies on the property are accurately platted as to property lines and depth below the surface, showing quality of ore in the several

parts, all rock areas are shown and all drifts, raises and workings accurately designated. As work progresses a complete history of the mine is developed. Accidents will happen, especially in mines worked by the shaft or underground system, and occasionally ore bodies are lost by the caving of drifts about them. All such lost "pillars," as they are called, have a definite location, and their size and grade of ore is accurately shown on the mine maps. It may be that because of the weakened condition of the ground in the vicinity of this lost pillar it would be impractical to attempt to recover it at once, but time must be allowed for the ground to settle before a new drift can be run through the cave to it. Or it may be that it can only be recovered by taking it when the next "slice" below is removed. But when the next "slice" reaches that point it must be known that the ore in the "back" is thicker there or the miners may not attempt to recover it. For this reason it is of vital importance to have the so-called lost pillar definitely located and its tonnage and quality clearly shown in order to justify the extra cost in attempting to recover the same.

There are many deposits of low grade ore that with the most judicious mixing with the richer ores would not render them merchantable at the present time, but as the demand for ores continues to increase these deposits may become valuable. Hence the fee owner deems it wise to carefully plat these areas and to preserve them intact so that, should occasion ever require them, they may be had at little cost in the way of exploring to locate them. The same reasons apply to the plan of mapping the location of areas of rich taconite, for it is believed by some of our most eminent mining experts that the time will not be far distant when the richest of the taconites will be shipped to the furnaces.

The time when these low grade ores and rich taconites

will be smelted is being hurried along by the establishment of large furnaces at the head of Lake Superior. This plant will so reduce the cost of transportation that lower grade ores may be smelted, and hence will naturally reduce the standard of what is now merchantable ore. Not many years ago ore that did not run as high as 56 or 57 per cent natural was deemed to be low grade and non-merchantable. In 1907 of the seventy-two grades of ore shipped from the Messabá range more than forty of them ran less than 53 per cent, and sixteen of these forty were less than 50 per cent natural. From this it will be seen that many ore bodies that a few years ago were considered non-merchantable are today good paying mines, so one can readily see the wisdom of conserving the low grade ores without unnecessarily disturbing them in removing the areas of high grade ores.

While a mine is being operated and the merchantable ores being removed the location, structure, etc., of the poorer ones is revealed, so again one sees the great necessity of accurately mapping them at that time, for after the ground has been worked through it is usually considered to have been thoroughly worked out, unless some definite data is kept showing the location and extent of the ore body left therein. The wisdom of this plan and the folly of not having adopted it are being shown up on the older ranges today, and in one or two cases already on the Minnesota ranges. Mines generally thought to have been exhausted are getting new leases of life, and ore bodies are being worked today that twenty-five years ago were thought to be worthless.

To be sure the operating companies have complete maps in most cases, but since their interest in the land is but a leasehold estate they do not need to go to the expense and trouble of preserving any data beyond that which will be of actual use during the life of their lease. When their lease expires, or is cancelled, the complete

title reverts to the fee owner, and the operating company having no further use for their maps and other data may destroy them. All of which goes to show how important it is for the fee owner to secure data covering his mine, while the same is being shown up free of any cost except that of recording the facts.

The state of Minnesota is one of the largest, if not the very largest fee owners of mineral lands, and yet today it spends as little on inspection and care of this vast amount of actual and potential wealth as some of the very smallest and poorest of the private fee owners. As a consequence of a lack of funds the state has very little reliable data covering the amount and character of the ore deposits on its leased lands and very little accurate data necessary to a complete history of a working mine, though before another year has passed two small mines will have been worked out and abandoned. It must not be inferred that the state has kept no record of what has been going on, for as a matter of fact each mine has a general record of its doings from day to day. The statements in this record are made from personal observations, but lack the definiteness as to quantity, quality and location that are supplied by the engineer's art of mapping and platting.

To secure information and inspect the operations the state's inspector visits the properties very frequently and watches each step of development. He visits the open pit mines while stripping is progressing and takes notice that in cleaning the surface of the ore the shovel does not take any more of the ore than is absolutely necessary in the work of cleaning it for shipment. Since ground suitable for dumping purposes is very valuable, he sees to it that no surface from private lands is dumped on state property. When loading ore is begun his visits are more frequent, in most cases at least once a day, and where two mines are operated in one pit, such as the

Burt-Pool Mine at Hibbing, Missabe Mountain Mine at Virginia, etc., the state has a man on the ground at all times of day and night to see that no ore is wasted and to take the numbers of the cars as they are loaded. If rock or low grade ore is encountered that must be moved and wasted on the dump, he sees that no more ore is wasted than is absolutely necessary. Before the steam shovel crosses from the private lands to state lands, or vice versa, the property line is carefully run out and staked, and a division point determined upon by the interested parties. If the bank is very heavy, or the shovel cuts the line at an acute angle the bank ahead of the shovel at the line is carefully cross-sectioned by the engineers before the shovel crosses the line, and cross-sections are again taken after the shovel has crossed. From the data thus gained a division is made between the interests.

In underground mines the inspector is more at a disadvantage, for there accidents may happen frequently and drifts crush easily. The inspector memorizes every part of the mine, so that not even one set may fall but he will take notice of it. He watches every move carefully to see that the ore is taken out clean, and that the timbering is sufficiently strong to hold up important drifts. With the present means all goes well until something happens, or some question arises, then he realizes how important it is to have an engineering equipment.

The fact that the very places where things are not going on as smoothly as they should, are the places the inspector must visit most frequently, renders his occupation a hazardous one at times. He must often go into parts of a mine where the timbering is crushing badly and where miners refuse to go, in order to get an idea of the difficulty, or an estimate of the extent of the accident. He must visit underground workings when the mine is not being operated to see that the timbering is

holding up. At such times he encounters bad air that extinguishes his light and he must grope his way out in the darkness if he be not overcome by the bad air.

Since the state is likely to be in the business for many generations, it is still more important that it preserve such valuable information while it can be had first hand and at slight cost. The reasons for a comprehensive system of mine surveys and analysis apply chiefly to underground mines, of which the future has many in store on the Cuyuna, Vermilion and other ranges. It also applies to the open pit mines in somewhat different sense, though in effect the same. The ore bodies are thin about the edges where they come in contact with the rock. Often the deposit is too thin to justify the removal of the overburden, so this thin ore body is mined out by the underground system called "scramming," and the ore dumped into the open pit. The ore is in contact with taconite, which is often very rich in iron, or passes into a body of low grade ore below a merchantable quality. Unless the location and qualities of this taconite and low grade ore be definitely recorded it will not be recovered except at great expense, even though the demand for ore may have made it valuable. The old open pit may have a bottom of rich taconite or paint rock. If the pit be filled with "stripping," as is occasionally done, the existence of this rich taconite, or paint rock, is concealed. Further, in protecting the present and future interests the progressive fee owner maps the ore bodies with regard to the grade of ore in the several parts of the deposits and carefully plans to have them opened and worked in such a manner only as to render the largest possible tonnages merchantable by properly mixing the ores from the several parts of the mine. He also endeavors to prevent the operator from "robbing" the mine of the high grade ore and thus leaving the balance non-merchantable, or in such a chopped-up con-

dition that it could not be mined profitably, even though the demand for ore bring it within the merchantable class.

The fee owner studies to have the mine worked only in such a manner that by careful mining and mixing the ores from the several parts of the mine all grades within reasonable limits will become merchantable during the life of the lease, provided it extends over a period of eight or ten years at least. An objection is sometimes made by the operator to taking certain portions of ore, or in mining in a particular manner, for the reason that taking such ore, or mining in such a manner, would produce an ore that would not meet with the terms of the guaranty in his contract for the sale of ore. This argument is met by the fee owner maintaining that since he is not a party to the sales contract he should not, in good conscience, be bound by the contract, and especially so if the contract be an improvident one.

We hear a great deal about the interests of the operator and the fee owner being the same in the question of removing every possible ton of ore from the mine, and in a large sense it is true. With the very largest furnace companies it is more nearly true than with those companies who are merely sellers of ore. The divergence of interest comes when we consider that the cost of production is a very vital question with those operating the mine. Superintendents, captains and shift bosses have, as a general rule, no pecuniary interest in the dividends of the company, but the term of their employment, the chances of their promotion and the amount of their compensation very largely depend upon their ability to mine a large tonnage and at a law cost per ton, hence it is not at all unlikely that they will neglect to remove a small or difficult body of ore when in the same time they might mine a larger tonnage of high grade ore at less cost. Besides this the common miner in many in-

stances is working on contract, and it is not reasonable to expect him to have the interest of the fee owner at heart more than his own and remove every shovel full of ore in the "back" or around bunches of rock when he can do better by leaving this to be covered up before the next visit of the captain or superintendent.

The captains and superintendents have a multiplicity of duties aside from those of seeing that the maximum of merchantable ore is produced from the particular mine, so again the fee owner deems it the wisest of business methods to have a man present whose sole duty is to see that the ore is properly mined at all times. It must not be thought that the fee owner's inspector is the only man that knows how to run a mine, or that he has the authority to outline the system of mining. The agent should himself be a man of much experience in mining and must have a fair knowledge of what constitutes merchantable ore, and should have some understanding of blast furnace practice. He must thoroughly understand the quality and extent of the ore deposit so as to be familiar with the grade and amount of ore in every part of the workings. If he lacks this information a great deal of ore may be left in a part of the mine when it is abandoned, simply because it would be a little more expensive to mine, or because the grade was not as high as the operator wished at that time.

It must not be assumed that the mine operators are dishonest and plotting to injure the fee owner that the latter inaugurates this system of inspection, for the former are fully up to the average in honesty, and the superintendents and captains must be up to the average in this respect, or they could not hold the responsible positions they do. It is not reasonable to rely upon the party of the second part to a contract to exercise as much diligence in caring for the interests of the party of the first part as he does for his own interests. In

other words, it is good business for each person to look after his own affairs. We would be provoked to laughter to hear that a plaintiff in a cause of action submitted the whole matter to the defendant and asked the latter to give him whatever he thought would be fair. The matter of operating a large mine is a matter of important business, involving many hundreds of thousands and even millions of dollars, hence it is nothing more than ordinary business sagacity to take an inventory occasionally. If this care is not taken in carefully crediting each part of the mine with the ore removed no inventory can be had upon which any reliance could be placed.

And again, inasmuch as the value of iron ore has greatly increased of late, and the inspectors are demanding greater care in removing the ore, there is increased likelihood of disputes arising between the parties. Some of these differences are likely to go into court, and if they do the fee owner must have definite and positive evidence to support his contention, and the time to secure such evidence is while the work is going on. It is equally important that this evidence, in order to be the best, should be first hand, *i. e.*, gathered by the party introducing it and in his exclusive possession and under his exclusive control from the time of its collection until presented to court.

I have spoken thus far of the attitude of the state in the matter of inspection of output under the contracts already in force, but there is another phase of the subject that may be of very great importance, and may even rival the one already discussed.

Continuing the idea that the state's best interest lies in conserving her natural resources and at the same time making use of them to the greatest possible extent, a number of things might be considered. First, since the state owns many acres of land in sections of the state that are thought to contain ore, and since much of this

state land is not under contract or lease the state should provide a new contract whereby the state could reap a goodly revenue from these lands and at the same time encourage mining. Our present mineral lease contains a flat rate of royalty, regardless of the quality of the ore. This operates against the low grade deposits in favor of the higher grades, even though the royalty itself is far too small even for the lower grades of ore. The new schedule of royalty should be elastic enough to do equal justice to the state and operator, and to encourage the operations on low grade properties as well as those of better quality. To meet such a condition the most progressive fee owners have devised a scheme of royalties on a sliding scale, using the metallic content as a basis. For example, ore that assays 58 per cent iron will carry a royalty of fifty, sixty cents or some other rate per ton, 59 per cent ore will carry one, two or three cents more per ton, and so on, increasing in a fixed ratio as the metallic units increase. On the other hand, ore that carries 57 per cent iron will be one, two or three cents per ton less, and so on, decreasing by the fixed ratio as the metallic unit decreases. In his report to the 1907 legislature the state auditor recommended such a contract for leased state lands. At least one very important contract has this additional provision that even this graduated royalty increases each year by a stated ratio.

This plan permits the operator to mine lower grade ores by giving him a smaller rate of royalty and permits the fee owner to realize on all his ore and at the same time to enjoy the fruits of the continued demand for ore. It is elastic enough to accommodate itself to the varying conditions of the ore, and at the same time keep pace with the demand as the facilities for mining, transportation, etc., are improved. There are lean years when the price of ore falls off. To prepare for such a contingency the up-to-date contracts provide for a rea-

sonable minimum output per year, based in some cases upon the amount of merchantable ore in the deposit at the time of making the lease. There are two ways of determining this, first by providing that the minimum per year shall not be less than a fixed number of tons with a royalty equal to what a certain grade of ore should be for that period. To illustrate, a lease dated Jan. 1st, 1906, minimum output per year 40,000 tons. Royalty for 1906 on 58 per cent ore 60 cents per ton, increasing or diminishing 4 cents per ton per metallic unit and increasing 2 cents per ton per year on the royalty of all grades. In case the mine is not operated in 1909 the lessees shall pay royalty on 40,000 tons on the basis of the price of 58 per cent ore for that year, which will be 66 cents per ton, or $26,400.00. A second manner of determining the number of tons guaranteed to be mined yearly is to provide that after the property has been thoroughly explored and a total existing tonnage agreed upon a certain per cent is adopted for the minimum, having in mind the size of the deposit and the fact that it will be either an open pit or an underground mine. It is always placed high enough to induce the operator to work the mine rather than let it be idle.

Several fee owners have agencies on the range equipped with modern buildings, costing from $15,000.00 to $30,000.00. Office, drafting room, fire-proof vault, chemical laboratory, sample storage vaults, etc., are provided in each building. All instruments necessary to mapping and platting the property and the working of the mine, such as transit, level, planimeters, protractors, drafting instruments and blue printing machines are provided.

The working staff is made up of a chief inspector, stenographer and clerk, a mining engineer or two, with his assistants, an underground expert, and perhaps a man located at each mine as car checker.

Such a system is effective, but the private fee owners deem it a wise business policy to inaugurate such a system, and they are men of wide experience. Since it is clear that they are justified in going to that expense, we are forced to the conclusion that ordinary business prudence would require the state of Minnesota to adopt some such a system to handle the princely heritage of its trust funds. In the earlier history of the state it practiced penury on a large scale in handling its timber, and from that experience it should learn a lesson so that this folly shall not be repeated with ore lands. We are just at the beginning of history of mining ore on state lands, and now is the time to adopt a comprehensive system for caring for this enormous volume of wealth.

The development of a mine means much to the locality and the state in general, for it brings a great many families at once into a new country, who need many agricultural products and have the money necessary to purchase the same. As soon as the people of Minnesota and the rest of the country awake to the fact that contiguous to the mineral regions of Minnesota are large areas of the finest agricultural lands that can be found anywhere, and in close proximity to an ever increasing cash market, the tide of immigration will cease to flow to northwest Canada and be diverted to northern Minnesota.

During the last few years the state has put forth commendable effort to divert the stream of immigration to its own lands in Minnesota by bringing before the home seekers the information that we have within easy reach of these excellent markets the finest kind of farm lands at a very reasonable price and upon the easiest possible terms. The good work should be encouraged and given a larger working fund, so that more of the advantages may be set out and a larger audience obtained.

The iron mines have not been used as an asset in ad-

vertising Minnesota other than as a source of taxation in the past, as much as their importance would justify. The development of the adjacent country will help the mining communities in many ways. All development will be reciprocal. The mines will furnish the markets and help build roads and other public improvements because of their immense wealth, and the farmers will supply the products more readily. Thus by co-operation both may profit. But in the meantime the state should push its already liberal policy of advertising the resources of northern Minnesota.

Fourth Session

SOCIAL CONDITIONS IN MINNESOTA

THE PEOPLE OF MINNESOTA

By Albert Ernest Jenks

The Dakota Indians, whose language gave us the word "Minnesota," were the first known holders of Minnesota soil. We are told that the Ojibwa Indians, frequently called Chippewa, near the close of the fifteenth century forced their way westward from Sault Ste. Marie along the southern shore of Lake Superior to La Pointe Island in Lake Superior. Every step of this westward migration of the Ojibwas was contested by the then holders of the area of present upper Michigan, Wisconsin and Minnesota, the Dakota Indians.

On La Pointe Island the Ojibwas remained about 120 years, at which time they had gained sufficient strength to secure a permanent foothold on the southern mainland, one settlement being on an island in the mouth of St. Louis river, the boundary line between Minnesota and Wisconsin. The movement into the Minnesota area soon began. The Dakota of Mille Lacs incurred the enmity of the Ojibwas to the north, and the drive of the Dakota was begun, probably sometime between the years 1612 and 1671, which was continued by the Ojibwas, and later by the white man, until in 1863, by act of congress the last of the Sioux were removed from the state.

Little needs to be said of the character of these first people of Minnesota. Their fierceness in their last outbreak, the New Ulm massacre, will long be remembered. Their ethnic contribution to the state is small, though practically all Indian blood in white veins in the southern half of the state is Dakota and not Ojibwa. The Dakota linguistic contribution is considerable; a large per cent

of the natural geographical features of the state bear Dakota names.

The United States government has acknowledged the Ojibwa claim to about one-third of Minnesota. The southern half of the state was never Ojibwa territory, and the same may be said, with slight reserve, of the western part—the Red river area. The first Ojibwa cession of land in Minnesota to the United States government was in 1837, when they ceded all east of the Mississippi river and south of Mille Lacs. In 1855 they ceded an immense tract in the north-central part of the state, reserving within said tract most of the reservations they still occupy. On these reservations there were 10,225 Ojibwa Indians in 1905. Of this number from 50 to 75 per cent are mixed bloods. The admixture of white and Ojibwa blood continues today.

Many accounts tell us that about the year 1660 two white men, Frenchmen from eastern Canada, spent about two years with the Indians of Minnesota, returning to Montreal with sixty canoes loaded with furs. In 1679 Duluth reached the shores of Mille Lacs. Professor Folwell in his "Minnesota" says Duluth was "the first white man in Minnesota not ashamed to report and record the fact." Probably the same year La Salle, with thirty companions, including Louis Hennepin, started westward from Quebec. The party arrived at the Illinois river, from which Hennepin, with a few companions, traveled northward up the Mississippi, landing in the spring of 1680 near the present site, it is believed, of St. Paul, and discovering during the same trip St. Anthony Falls. Duluth, with a small party of French fur traders, joined Hennepin, and they all returned to the east.

In 1694 Le Sueur built a trading post on Prairie Island in the Mississippi, about nine miles below Hastings. In 1700 he explored the Minnesota river a distance of 150 miles to the mouth of the Mankato, and there established

a fort and trading post. With Le Sueur active French explorations in Minnesota seem to have ceased. French traders remained in the territory until 1761 at least, but no permanent settlement was made.

By 1761 British traders were in Minnesota. In 1763 Great Britain became, by treaty, possessor of all northern lands east of the Mississippi. Twenty years later the United States, by treaty, acquired these lands, though for some thirteen years after this many garrisons still flew the British flag. The Hudson Bay Company at first had a monopoly of the fur trade, but in 1787 the Northwest Company was formed, and for forty years held the trade west of the Great Lakes. It is stated that in 1789 the Northwest Company had forty clerks, fifty interpreters and six hundred canoe men in the Minnesota area, all British subjects. The possibilities of the early mixing of the blood of the Indian and the white man may be seen in this statement.

Minnesota west of the Mississippi had a different history politically from Minnesota east, but this affected very little the character of the fur trade, which was carried on by the Northwest Company, mainly by British subjects, up to about 1815.

In 1816 congress passed a law excluding foreigners from trade with the Indians; Astor's American Fur Company had been organized in 1809, and the fur trade now passed into its hands. Largely to protect the trade in the Minnesota area Fort Snelling was erected in 1820. The fur trade continued throughout Minnesota's territorial days, and we are told that a trading post was maintained at Mendota, at the confluence of the Mississippi and Minnesota rivers, as late as 1850.

The last of the fur traders metamorphosed into pioneer citizens, such traders as Faribault, Provencelle and Renville becoming permanent agriculturists and state builders. These French, British and American fur trad-

ers are permanent warp in the ethnic fabric of Minnesota, though they probably made little cultural contribution to the state.

The first real opening of Minnesota lands for settlers followed the Dakota and Ojibwa cessions of land in 1837, when all land east of the Mississippi became United States territory. Folwell says the first non-military white settlement in Minnesota was the French half-breed settlement at Mendota, and the first American settlement was at Marine on the St. Croix river early in 1839. St. Paul was a small French village from the time the first house was built in 1838 until some eight years later, when a post office was established and Americans began to come in larger numbers. In 1843 Stillwater was laid out, and St. Anthony in 1847.

Minnesota became a territory in 1849. The first territorial census in August, 1849, gave her a population of 4,940. This population was largely distributed along the Mississippi river, around and below the present site of the "Twin Cities." Of the twenty-seven members of the first Minnesota legislature, meeting in St. Paul in 1849, fifteen were born in the North Atlantic, two in the South Atlantic, four in the North Central states and four in Canada, with three whose birthplaces are unknown. The United States census of 1850 gave Minnesota a population of 6,077, of which 38 per cent was female. Of the total population, 65 per cent was native born, the larger number probably from the Atlantic states. Of the 2,048 foreign born in the state in 1850 about 70 per cent was Canadian. There were 271 Irish and 146 Germans. The English and Welsh, Scotch, French, Swiss, Dutch, Norwegians, Swedes and Russians had representatives ranging from two to eighty-six, and the Austrians, Belgians, Danes, Italians and Spanish were each represented by one. This early nucleus of foreign people in the state is of interest since, as we shall note later, Minnesota

has had a proportionate task of amalgamation of foreign people almost unequaled by any other state.

The removal of the Dakota Indians in 1853 farther westward to the Minnesota river and the extension, the next year, of the Rock Island & Pacific railroad through to the Mississippi river, so that Minnesota could be directly reached by steamboat, brought the first and probably greatest phenomenal inflow of people to the state. The territorial census of the year 1857 gave a population of 150,037, the increase of over 140,000 being largely in the three preceding years.

According to the United States census of 1860 Minnesota's population was 172,023. Of this number two-thirds were native born. Over 21,000 were from New York state; Pennsylvania, Ohio, Wisconsin, Maine and Illinois each had contributed more than 5,000 to the number. Vermont, Massachusetts, New Hampshire, Michigan, Connecticut and Iowa had each given more than a thousand.

Of the one-third, or nearly 60,000 foreign born in 1860, 30 per cent was German, 21 per cent Irish, 20 per cent Scandinavian, 13 per cent Canadian, something less than 6 per cent English, and less than 2 per cent each Scotch and Swiss. The remaining 6 per cent was distributed among some thirteen different peoples—mainly nationalities.

In 1870 the population of the state was more than twice and a half that of 1860. The homestead act of 1862 contributed to this increase. The foreign born were 36 per cent of the whole. There were over 40,000 Germans, the Norwegians, Irish, Swedes and Canadians following next in number, each with more than 10,000.

The increase of population from 1870 to 1880 was about 75 per cent. In 1880 there were in the state more than 302,000 Minnesota born, more than 210,000 United States born outside of Minnesota, and more than 267,000

foreign born. In 1860 there had been nearly twice as many native born from the Atlantic states as from the central states; in 1880 there were slightly more native born from the central states than from the Atlantic. New York constantly led during those years in the number of its native born in the state, though in 1880 Wisconsin was a close second.

Of the foreign population of 1880 the Scandinavians furnished 40 per cent. They were the prevailing foreign element in the western part of the state and in the counties on the southern border. The Germans contributed 24 per cent of the foreign element; they predominated in the south-central and southeastern counties. The Canadians, who were 10 per cent of the foreigners, were found in the north and north-central parts of the state. The Irish were something under 10 per cent of the foreigners; they predominated in no county, but were found in largest numbers in the southeastern counties. The other 16 per cent of foreigners was distributed among thirty-five different peoples.

The population increased from 1880 to 1890 about 50 per cent, and from 1890 to 1900 something less than 35 per cent. In 1900 Minnesota had more than 1,700,000 people, and in 1905 more than 1,900,000. The percentage of foreign born to native born was 35 in 1890 and 29 in 1900. In 1890 and 1900 the Scandinavians, Germans, Canadians and Irish were, in numbers, still our leading foreigners.

In 1905 there were in the state 1,057,566 native born, 366,767 United States born outside of Minnesota, and 537,041 foreign born. The native born element prevailed in all counties of the state. About 23 per cent of the foreign element was Swede, about 22 per cent was German, and about 20 per cent was Norwegian. The Finns ranked fourth of the foreigners in order of numbers in 1905. The census of 1905, and more especially the Immigra-

tion Reports of the last few years, show that Minnesota has been affected, though slightly as compared with many other parts of the United States, by the great Slav invasion of the last years. This will be noted more particularly later.

The distribution of the population of the state has been constantly from the river counties toward the west and north. Some of the southeastern counties earliest settled have already passed through the stage of rapid inflow to that of actual decline in population. In ten southeastern counties there was a decrease in population from 1895 to 1905. In the remaining southeastern counties the increase in population was only 5 to 10 per cent. In the counties directly west of these last mentioned, from Otter Tail to the southern border, the increase was 10 to 25 per cent. In all counties on the western border, with three exceptions, and in St. Louis county to the north, the increase was 25 to 50 per cent. In all the other north central and northeastern counties the increase was 100 per cent and more.

Minnesota's population has been very close to one-third foreign born since her first federal census in 1850. In her proportion of foreign-born people to native born she has been exceeded by only one state, namely, Nevada; Wisconsin ranked next below Minnesota in this regard and the Dakotas next. The task of assimilation has been made easy, however, since from first to last Minnesota's immigration has been predominantly Teutonic—that is, has been composed of people who received their physical and psychic characteristics in northwestern Europe. Among these peoples are the majority of those from the British Isles, the northern Germans, the majority of the Dutch, Belgian, Dane, Swede and Norwegian peoples, and the Finn. (For purposes of simplicity I here classify with the Teutons the relatively small portion of so-called Celtic people who are in Minnesota.)

The predominance of Teutonic foreign-born Minnesotans is an ethnic fact of great importance to our state. In the essentials of superior physique, dominance of will, industry, keenness and trustworthiness of intellect, high ideals and loyalty to the same, and, last, in ready and permanent adaptability to American environment, both physical and social, the Teuton has no superior. In fact, American institutions in the main and at bottom are but Teutonic institutions developed for 1,000 years mainly in the British Isles and transplanted to America. And Americans up to the present day, what are we? We are but transplanted Teutons. Few states today seem destined to remain Teutonic longer than Minnesota.

The inflow of the Scandinavian foreign-born population since 1850 is the most striking fact in the ethnic history of the state. In 1905 the Scandinavians constituted 47 per cent of the foreign-born population of the state. In 1907 the Scandinavian immigration into the United States was only about 3½ per cent of the total immigration; however, in the same year the Scandinavian immigration into Minnesota was 38 per cent of her total immigration.

The Scandinavians are our Teutons *par excellence*. In two small valleys in Norway the physical characteristics of the Teuton are most typically blended; there the Teuton is tallest, has the longest head and the most blondness. As a whole the Scandinavians are today prominently marked by the psychic characteristics which made the old Viking—strong individuality, courage, stubbornness, firmness and determination. They are also, on the whole, honest, truthful, decidedly hospitable and revengeful to a marked degree. They are the most literate of all our European immigrants, there being only 7-10 per cent of illiteracy among the Scandinavian immigrants. There is scarcely a county, city or town in Minnesota in which land is not owned by the Scandinavians. In

the vast majority of cases the Scandinavian has first been an agriculturist; the desire for ownership of land seems to be inherent. A falling off from the years 1870 to 1900 in the number of those engaged in agriculture was due to an increase in the immigration of city people, and also to the fact that many of the old settlers moved to town and engaged in business. The Swedes are the predominating foreign element in most of the counties east of the Mississippi and in those directly west of the Twin City area. The Norwegians predominate in the northwest counties and in the extreme southeast counties. The Danes are found in largest numbers in the south central part of the state. The Swedes are much more urban than are the Norwegians and Danes. Nearly one-third of the foreign-born Swedes in 1905 were in our three large cities; while less than one-fifth of the Danes and Norwegians were in the same cities. One cannot say that the Scandinavian is endowed to make any peculiar or unique contribution to our culture. He seems rather especially endowed to fit quickly into American institutions, to strengthen them with their multiform chances for the strong, eager, progressive individual. The Scandinavian is essentially an American in the raw.

In 1850 there were 146 Germans in Minnesota. In 1860 they numbered 18,400, and they have ranked first in number among the foreign born (if we consider the Swedes, Norwegians and Danes separately) from that time until the census of 1905—at which time the Swedes succeeded to first place. There were nearly 120,000 foreign-born Germans in the state in 1905. They are the predominating foreign element in many of the southern counties. Somewhat less than one-fifth of the foreign-born German Minnesotans were in our three large cities in 1905. The Germans in Minnesota, as elsewhere, are among the most industrious and frugal of the American people. Men, women and children have worked side by

side in their farm labors; it is in the occupation of farming that the Germans have excelled in Minnesota, though they are successfully toiling in all industries and professions. One must not overlook the unique position of the St. Paul German, whose lumber interests are frequently estimated as second only to the vast financial holdings of Rockefeller. The German ethnic contribution to Minnesota is next to that of the Scandinavian, while his culture contribution is unique. To the German more than to any other single foreign-born people is due the almost revolutionary modification of the Puritan Sabbath of America. Closely associated therewith is the German manufacture of beer and the summer beer garden, to which in their origin, our present out-of-door amusement parks are so closely related. However, we may say that while the southern German is far less Teutonic than the northern, we have every right to ascribe to the Germans of Minnesota, as well as to the Scandinavians, most of the estimable Teutonic characteristics already presented.

The Finn is the ethnic meteor in Minnesota. He was not mentioned in the state in 1890. In fact, the United States census of 1890 is the first one which distinguishes the Finn from other Russian people, and that census gives the number of Finns in the United States as two who were in the Dakotas. Within five years, or in 1895, there were 7,652 Finns in Minnesota. The number of Finns increased to 10,727 in the next five years, although the German, Norwegian and Swede inflow decreased. In 1905 the foreign-born Finn population was 19,847. The immigration reports show that in the last three years nearly 8,000 Finns have entered the state; nearly twice as many Finns as Germans have come during that time.

Although in Finland nine-tenths of the people are agriculturists, the great majority of those who come to the United States become miners. Michigan is the only state outranking Minnesota in her number of Finns.

Considerably more than half the Finns in the two states become copper miners and iron miners. The Finns were in 1905 in Minnesota the predominating foreign element in St. Louis and Wadena counties. I heard only the best of things of the Finns in St. Louis county recently; mining captains, lumber-crew bosses and merchants told me the Finn is the most trustworthy foreigner in the country. Several of my informants were themselves Scandinavians.

The Finn is not a Mongolian, in spite of the frequent statement to that effect; neither is he even an Asian. He has been called Scandinavian, but he is not, though Finland was a Swedish possession for 600 years prior to 1808, when Russia seized it. The Finn is a Teuton in everything except language; his physical and psychic characteristics are Teutonic. They were acquired near the Baltic sea, which is the geographic center of the extensive European Teutonic area.

The Finns are being driven from their home lands by the despotic efforts of the Russian Czar to Russianize Finland. The United States seems to be the only country profiting by the Czar's Finland policy. The Finn is a Protestant, a Lutheran. He is at the crest of the European wave of literacy. Of the 14,000 Finns who came to the United States in 1906-7 only 351, or less than 3 per cent, could neither read nor write. This, in marked contrast to, say, the Poles, who came in 1906-7, 38 per cent of whom were illiterate. No better educated laborer is coming to us today than the Finn, and he is noted for his endurance, industry and honesty.

We now turn to the Slav in his recent inflow to Minnesota. From about 1882 there has been a very phenomenal change in the source of immigrants from Europe to the United States. In 1907 our immigration had so changed its sources from the Teutonic peoples of northern and western Europe to the Slavic and Mediterranean peoples of eastern and southern Europe that 75 per cent

of the total United States immigration was from the latter people.

The Slav is in main the man from Russia and Austria Hungary. To this, exception, in Russia, must be made of the Hebrew, the Finnic, and the Lithuanian peoples, and in Austria Hungary of the Hebrew and the German peoples. The Magyar, though not a Slav, has been the dominant man among the Hungarian Slavs for a thousand years, and is here included among them. With the exception of the well-known Greeks and Turks, the Slavs include practically all the people of the "near East." They are the Bohemian and Moravian (or Czech), the Slovak, Pole, Ruthenian, Slovenian, Croatian, Bosnian, Dalmatian, Herzegovinian, Montenegrin, Roumanian, Bulgarian and Russian. Practically all of this list were until very recent years new names to the student of American immigration.

The Slav in general differs from the Teuton physically, being of shorter stature, darker in complexion and having a broad instead of a long head. Culturally he differs from the Teuton very materially; with the exception of the Bohemian he is very illiterate; his agriculture is the crudest, he knows nothing of the use of machinery; politically he knows no power or responsibility, being the subject of absolute monarchy; and in religion he is a Greek or Roman Catholic.

There were something over 15,000 Slavs in Minnesota in 1880, over half of whom were Bohemians. It may be said at once that the Bohemian immigrant, in development, ranks with the immigrant from northern Europe. In literacy he ranks ahead of the German immigrant, there being only 1.7 per cent of illiteracy among Bohemian immigrants. In 1900 Minnesota had over 11,000 Bohemians, but their number had decreased to 8,400 in 1905. About one-fourth of them were in our three largest cities. Le Sueur county and the counties imme-

diately adjoining it are the center of our Bohemian population.

The total number of Slavs in the state nearly doubled in the ten years from 1880 to 1890. There was a 36 per cent increase from 1890 to 1900. From 1900 to 1905, though there was a 62 per cent increase in the number of Austrians and a 49 per cent increase in the number of Russians, there was a considerable decrease in the number of Poles and Bohemians, making a decrease of some 3,000 in the total number of Slavs.

When we note that the total immigration to the United States from Austria Hungary tripled in the decade from 1880 to 1890, doubled in the next decade, and considerably more than doubled in the five years from 1900 to 1905, we see how few Slavs comparatively Minnesota has received. However, the immigration reports of the last three years, which show such an enormous increase in the Slav immigration to the United States, show an increase also in Minnesota.

One Slav from the Bosnian, Dalmatian and Herzegovinian group came to Minnesota in 1899, and one in 1900; they have increased yearly until 255 came in 1907. In 1901 three of the Bulgarian, Servian and Montenegrin group came; in 1906 there were 149; in 1907 there were 699. Of the Servo-Crotians there came to the state 302 in 1899; they have increased to 1,488 in 1906 and to 2,078 in 1907, outnumbering the German immigrants these last two years, and thus ranking third among the foreigners coming to the state, following close upon the Finn, who was second to the Swede. The rate of illiteracy among these Slavic immigrants ranges in general from 30 to 50 per cent. They go in largest numbers to our great cities.

In 1905, of the 14,400 Austrians in Minnesota, 40 per cent were in our three large cities, Minneapolis having the largest number, nearly 3,000. Of the 8,800 Russians

in the state in the same year over 60 per cent were in our three large cities, Minneapolis again having the largest number, over 3,000. The Austrians are found in fifty-one counties of the state and the Russians in seventy-three. The south central counties contain the largest number of Austrians.

Time will not be taken to speak of the Italian and Hebrew immigration to Minnesota, which, though it has been constant, has been very slight compared with the great inflow of these people to the United States as a whole. It may be sufficient to say that in 1907 Minnesota received one-seventeenth of the Teutonic people who came to the United States, while of the 76 per cent of people of southern and eastern Europe who came to the United States only one one-hundred twenty-seventh reached Minnesota.

During the University year of 1906-07 I gathered statistics in the University of Minnesota which disclose, among other things, something of the present state of ethnic amalgamation of the people in the state, as shown by 488 marriages, resulting children of which were in the University. These statistics have been arranged to show, first, the amount of ethnic cohesion, i e., the tenacity with which a given people marries its own members (as German to marry German) ; and, second, to show the amount of ethnic amalgamation, i. e., the tendency a given people has to marry outside its own members, (as German to marry Norwegian.)

To show the nature of the statistics two sets of facts are given:

Amalgamation With the American

The American had married with the American 129 times, with the English 52 times, with the Scotch 28 times, with the German 21 times, with the Irish 15 times,

with the Welsh 9 times, with the Dutch 2 times, with the French once, and with the Norwegian once.

Amalgamation With the German

The German had married with the German 49 times, with the American 21 times, with the English 7 times, with the Irish 5 times, with the Scotch 4 times, with the Norwegian 3 times, with the Swiss 3 times, with the French 3 times, with the Dutch 2 times, with the Dane 2 times, with the Slav once, and with the Swede once.

Without giving further tabulated facts, and to summarize, it was found that the American had married 129 times with the American, and also 129 times with all other peoples. One hundred and four of these 129 marriages were with people of the British Isles; however, the German was a favorite, ranking third in number. The English had married 102 times with the English and also 102 times with others. The Scotch had married 52 times with the Scotch and 62 times with others. The German had married 49 times with the German and 52 times with others. The German was the greatest mixer of the foreign-born peoples considered, having married with eleven other peoples, while the English and Norwegians, ranking next, married with nine others each. The Irish married with the Irish 46 times and with other peoples also 46 times. To conclude, it was shown that of these thirteen peoples considered, having from 2 to 258 marriages, first, all had married with their own people much more frequently than with any other single people; second, the large majority of them had married with their own people and with all other people an exactly or almost exactly equal number of times. So perfectly did this latter rule work out as to make the figures surprising. We, therefore, see that at the time these marriages were being made the forces of ethnic cohesion and amalgamation

were equal in Minnesota. The exceptions to the rule show that with the Scotch, German and Dutch the forces of ethnic amalgamation were slightly stronger than those of ethnic cohesion.

Had this investigation been made ten years earlier it would doubtless have shown that a group married its own numbers more than it married others; and should a similar investigation be made ten years hence it would doubtless show that more in the groups marry outside their own membership. In other words, ethnic assimilation and amalgamation in Minnesota are taking place.

Though Minnesota has had, with one exception, a larger percentage of foreigners to absorb than any other state, yet on account of the ethnic nature of her immigrants she is today as essentially American in her ideals as ever. Further, though the state will have a certain share of peoples from eastern and southern Europe to absorb—as Slav, Italian and Jew—yet because of the relative fewness of these as compared with many other states, Minnesota seems destined to remain Teutonic in blood longer than many of our states, and probably as long as any, and to perpetuate as long as any other state the ideals which the transplanted Teuton has made American.

SOCIAL LEGISLATION IN MINNESOTA

By W. E. McEwen

To be perfectly candid with you, I did not at first realize the magnitude of the subject to which I consented to address myself. Reflecting upon the theme, as one of my humble capacity must, upon any subject before he can deliver himself of such suggestions as would merit the consideration of an intelligent audience, I discovered that social legislation in Minnesota involved a reference to so many important questions, to do justice to any one of which would require a degree of time and preparation that the multiplicity of other duties would preclude me from bestowing upon it, even were I equal to the occasion in other respects.

The subject in its entirety covers a field so extensive that our law makers in their wisdom classified its various phases under such designations as parent and child, guardian and ward, master and servant, and possibly other titles and subdivisions. Not being a lawyer, I cannot in the presence of such distinguished members of that profession venture to speak authoritatively upon that point.

On this occasion I shall confine my remarks to such social legislation in Minnesota as grows out of and properly pertains to the relation of master and servant, or, to use terms more in harmony with the spirit of our day and generation, employer and employee.

With respect to those two correlative terms, and my individual relation to them, I am reminded of the story of the good old woman in the Emerald Isle who, when asked where she expected to go when she died, replied

sorrowfully: "I don't know, for I have friends in both places." I am in the same predicament with regard to those terms, but with this difference; instead of my friends being concerned with them, I, myself, am at one and the same time employer and employee, and when my sympathy for myself in the one is in the ascendancy, my sympathy for myself in the other is in abeyance, and vice versa.

Once more referring to the other social or domestic relations and the legislation needed to prescribe and regulate their correlative duties, it is clearly manifest that so far as the relations of parent and child, guardian and ward, and husband and wife are concerned, the conditions, requirements, duties, obligations, restraints, moralities, and ethics which appertain to these have not changed materially for centuries. The changes in legislative enactments on these subjects have been merely such safeguards as the exigencies and moral ethics of an advancing civilization demanded. I need not dwell upon this point, for I take it, that no one will seriously controvert the statement. But with regard to the correlative rights, duties and liabilities of employer and employee, the departure from the conditions and methods which obtained in every department of human endeavor have been so radical that they could not possibly have been anticipated by the brightest minds of the past, and howsoever much we may venerate their good intentions and legislation, we must acknowledge the inadequacy of such legislation to meet the conditions which confront the state and its citizens today.

However, compared with most of the other states, Minnesota's law makers have taken advanced ground on legislation affecting the moral and economic welfare of her people. We were among the first of the states to enact measures regulating child labor and providing for compulsory education. I know of no state whose laws on

this subject are more rigid. This becomes all the more creditable to Minnesota when it is remembered that our state is devoted more to agriculture than to manufacturing, and the necessity for such legislation was not so imminent as in states where the awful competition in a fast developing industry was taking the child from the play ground and placing it in the workshop and factory, that its life blood might be coined into dollars.

And still it was much easier for Minnesota to take this step than it was for Massachusetts, whose cotton mills and textile works were facing the fiercest competition the world ever knew. The prevention is much easier than the cure, and whenever legislation is proposed which will seriously affect a state's industry sufficient political influence is usually exerted to prevent its enactment, no matter how repulsive its methods may be to society.

It was perfectly in accord with the commercial spirit of the day for industries, because of keen competitive conditions ever confronting them, to supplant working men with working women, and later to invade the school room, taking therefrom mere babes and forcing them into the industrial world, at work, but recently occupied by the woman wage earner.

The introduction of new machinery came with such rapidity the past half century that the human side of industrial life has been sadly and almost shamefully neglected. It did not take the owner of the new and improved tools of production very long to understand that the necessity for the artisan was being minimized; that the machine was doing the skilled work, and the factory operative was a much cheaper laborer.

Then with the decrease in the cost of production brought about by an increased machinery output, with an additional cheaper labor cost, competition became keener still, and it was found that a woman operative could do the work equally as well as a man at a much

less cost, so inroads were made upon the home, and the woman wage earner became a factor in our industrial life. This cheaper cost in production seemed only to embitter competition, and it was soon discovered that a child could tend a machine as readily as a woman and at a lower wage scale.

The old law of self-preservation compelled the laborer to resist every reduced wage scale, following every decrease in the cost of production. The national government sought to protect him with a tariff against the cheap labor products of other countries. It then placed restrictions upon the immigration of Chinese and Japanese coolies, whose competition was becoming a serious menace to American workingmen. But no valid measure could be enacted to protect him against the competition of woman. He did not expect to prohibit her from working if she so desired, but he was insistent that she receive the same wage as he for doing the same amount of work. Legislation along this line would have been an interference with her contractual rights. With her then he must contend.

With child labor, however, the organic law of our states was found to be broad enough to restrict and even prohibit its employment under certain conditions. In New England competition in the cotton mills and textile works had forced the manufacturers to resort to the employment of children. With the enactment of child labor laws in those states these industries were forced to move nearer the source of the raw material, in the south, where little, if any attention is being paid to any phase of the labor problem.

There is both a moral and economic side to the child labor evil. All society recognizes the first, while labor contends against both. The stunted and emaciated youth, and the premature old man are the fruits of society's

negligence because of its fear of regulating the conduct of industry in its relation with labor.

States old in manufacturing were compelled to take legislative action against child labor to prevent the degeneracy of their masses. States new in industry, where there is marked class distinction, such as in some of the southern states, seem to care little for either the social or physical well being of their working classes, while states, like Minnesota, which pride themselves in the strength of their men and women, even in the absence of a crying necessity, have sought not only to restrict the employment of children in industry, but have provided for their mental and physical development by establishing a public school system and the enactment of a compulsory educational law.

Minnesota has done more than this. Before commercialism spread its wings over this progressive commonwealth she observed its demoralizing influence upon the home, which in the older states was robbing that "sacred refuge of life" of its beauty and charm by utilizing its fairest flower—woman—to feed the wheels of industry; and this, too, with no regard for her health or strength. So she resolved that her duty was plain; that so far as her organic law would permit every protection in this respect would be given to the working woman in her new activity.

A law providing for seats in rooms where women are employed, and permitting such use thereof by them as may be necessary for the preservation of their health, was enacted with little opposition.

A law limiting the number of hours in any one day a woman shall be required to work, domestic service excepted, was next deemed advisable for the further protection of her health, but she may work a longer number of hours for extra pay. This latter clause was a com-

promise. The legislature will be asked to modify it during this session.

Laws pertaining to sanitary conditions were then given an impetus, and today there is being advocated a measure providing for rest rooms in all places where women are employed.

At the last session of the legislature provision was made for the employment of a special inspector whose duty it is to examine into the sanitary conditions in all factories and work houses, hotels and restaurants, and all places where women are employed, and to report to the next session of the legislature the existence of any conditions or practices which detract from the general well being of the women wage earners of the state, for the purpose of passing new laws that may be necessary for the advancement of women laborers.

It can thus be seen that the progressive spirit which prompted Minnesota's law makers to offer the first protection to the woman laborer is still alive, and we may look forward to some remedial and necessary legislation in that direction during the coming session of the legislature.

I am sure our state will shirk no duty in dealing with the moral or physical aspect of the woman's labor problem, but the economic advancement of the woman laborer, like that of the man, in such efforts as securing a just remuneration for her services must rest either in herself, or in the benevolence of her employers.

Minnesota, too, leads the several states in laws designed to offer protection to the lives and limbs of her work people by compelling the placing of proper safeguards about all pieces of dangerous machinery, and by prohibiting the use of defective machinery. No law upon our statute books is so rigidly enforced.

The existence of the tenement house factory and the sweating system have been most grievous evils to all

society in the larger cities. Trade unions and settlement workers have within recent years called upon every resource to eradicate them, and with a marked degree of success. Nothing in our industrial life has had such a depressing effect upon the health and morals of the working classes as the conditions surrounding those employed in tenement houses and sweat shops.

Here sallow and haggard human beings toil incessantly from morn till midnight for a mere pittance, with scant and unsanitary living rooms as work shops, and not a breath of fresh air from one day to another. Here disease is prevalent in every form. Its very environment is infectious. Amid such surroundings society's outcasts and criminals find a fertile breeding place. No blot upon our industrial system is so hideous, and none has given such a combat when attempts were made to remedy the ills prevailing there.

Legislative committees, sociological societies, trade unions and magazine writers succeeded in calling the attention of the public to the unwholesome conditions existing among tenement house and sweat shop working people, and one of the first states to respond was our own state of Minnesota.

Recognizing that this state was destined to take its place some day among the leading manufacturing states of the Union, our law makers, with commendable foresight, enacted into law measures which will, so long as they remain upon the statute books, prevent the introduction of the evils affecting labor as they exist in the tenement houses and sweat shops of the larger cities of our nation. We have in Minnesota a very good law providing for the sanitary inspection of all places where working people are employed. With its impartial enforcement we need fear no social condition in Minnesota of the character above referred to.

Efforts are to be made at the coming session of the

legislature to secure the enactment of a law providing for a minimum amount of air space for each employee in a factory or workshop. If this can be done another barrier will have been placed in the way of unsanitary work rooms, and another step will have been taken to protect the health of the working classes. Minnesota has never been found wanting in legislation of this character.

Providing bureaus of information to aid the unemployed to secure employment is another onward step in social legislation recently taken by Minnesota. The state was moved to do this because of the wholesale abuse of workingmen by private employment agencies, in which applicants for employment were submitted to frequent injustice. For a fee men were sent far from home, after paying their last dollar for a job, only to find when reaching their destination that there was no work for them, and they had been defrauded out of their money.

Many instances were known where private agents entered into conspiracies with foremen of crews of men, and the latter were provided with an endless chain of laborers, the employment agents dividing the fee with the foremen, who in turn indiscriminately discharged the old men to make room for the new, and so on, labor at all times being the victim. With four years of trial the state's employment bureaus have fulfilled the expectations of their most enthusiastic advocates, and additional legislation to promote their usefulness is expected from time to time.

Of course, it must be conceded that injuries may occur in public institutions, just as they have in private agencies, for everything depends upon those in charge. However, they are fulfilling their mission, and their usefulness must depend wholly upon their use by society. It does seem absurd that a condition should be tolerated

which compels the wealth producer to pay for a chance to work. The state employment bureau is established to discourage such practice.

Time will not permit a longer discussion in detail of the many laws upon our statute books enacted for the moral, physical and economic protection of the people. We have so many good laws, and there are many more to be enacted if Minnesota is to keep pace with the growing demands of civilization. Even some of our good ones should be amended to meet the requirements of today. I would extend the law requiring the sanitary inspection of workshops to a sanitary inspection of homes, particularly applying to those inhabited by tenants. The virtue of this is apparent to all who have made a study of any phase of the question of housing our work people.

I would call upon the best minds in Minnesota to lend their efforts to the problem of justly caring for the human wrecks who are victims of industry's terrible hazard.

I am aware that the question of employer's liability is a difficult one, and I approach its consideration briefly, but with some degree of diffidence, not because of any misgivings as to my understanding of the principles which should govern in enacting adequate legislation on the subject, but because the individual who will today contend for laws righteously in harmony with absolute justice to employer and employee, in the light and fact of conditions as they now exist, invites to himself the opposition and antagonism of well-meaning men, who believe in adhering to the ideas or basic principles underlying legislation that was adequate and just enough in its day, but is neither adapted to nor consonant with present conditions in any line of industry whatsoever.

The old doctrines of assumption of risk and of contributory negligence have been but slightly modified through the centuries. During this time a marvelous development has occurred in industry. The bench and

hand tools of the mechanic have been displaced by intricate machinery with its many cogs, shafts and pulleys, all running at high tension, and all requiring the watchful care of man. The factory operative assumes a far greater risk than the mechanic, whom he and the machine have succeeded, and the faster the wheels go the greater the risk. Railroading is more hazardous than stage driving. The motor man on a rapid transit street railway is in more danger than was the mule driver. The steel worker on modern high skeleton structures takes chances never before demanded of labor. Yet men must do this work. It is part of our civilization. Society depends upon their daring, but it has not appreciated its obligation to them.

However, the subject is attracting much attention of late in the United States, as is evidenced by reference to it in President Roosevelt's messages to congress, in federal legislation, in political platforms, and in numerous magazine articles.

In Minnesota, no less than in other states in which there is much industrial development, accidents to workmen are becoming so numerous that it is desirable not only to seek the best methods of prevention, but also to provide a method of settling the claims arising out of such accidents that will be equitable, expeditious and economical.

European countries have given more attention to this question than we have in the United States. Their recent laws afford a better guarantee to injured workingmen than do the laws of our country. We shall probably be obliged to copy after them. Some of our states are beginning to do so, and from investigations being made by their commissioners of labor it is expected that they will not only cull the best from the laws of other countries, but they will offer something better in addition

thereto. We would not be American if we were content with less.

No one will deny that when a man is injured he needs money. Where shall he get it? Must he rely on the charity of the public? He cannot depend upon compensation from his employer because in most cases the employer cannot be proved negligent.

Compensation to workingmen for injury done to health or body by industry is not purely an industrial question; it is society's problem, and in Minnesota the opportunity is afforded to the best minds in this state to work out a plan that will offer more security to the injured, and place the least burden on industry.

Earnest men in the legal profession are giving the problem the most serious consideration. It is ever a live topic for study in the university, and employers in their associations seldom fail to give it weighty thought. The workingmen also in the trade unions, while probably handicapped in ability to think out an acceptable plan, are not far behind the others.

I am quite familiar with their philosophy, and while you may not agree with us, we believe that the time has come when the burden of safeguarding the life and limb and health of employees, and paying an adequate compensation for injuries should be borne by industry under the supervision of the state. An accident fund ought to be created; this fund to be raised by taxation levied on all industries which menace the life or limb or health of employees, and each line of industry ought to be assessed at a rate which will cover the loss resulting annually therein; each line of industry being taxed according to its liability for causing accidents, and the liability of each separate line of industry to be determined by securing necessary statistics on the accidents occuring therein.

This burden would eventually fall upon society in general, because, as one of the fixed charges of production,

it would naturally be added to the cost thereof. The difference in cost, however, would not be great, because employers are obliged to pay out large sums of money each year to liability companies. Under the trade-union plan this cost would naturally be eliminated.

But I have possibly exceeded my time limitation without even satisfying myself much less satisfying you. I have an abiding conviction that although the problems connected with a true adjustment of the rights and liabilities of employer and employee are not yet as clearly defined by our laws as could be wished, yet the good sense of the American people, led by the progressive spirit of the ethical forces of our own state of Minnesota, will in due time solve the question in a manner alike just to employer and employee and the public.

MINNESOTA'S EDUCATIONAL SYSTEM AND ITS PRESENT STATUS

By A. W. RANKIN

The first school code in Minnesota was enacted by the territorial legislature in 1849. By this code provision was made for a superintendent of common schools to be appointed by the governor. In the "Organic Act" of Minnesota, passed by congress in 1849, lands were set apart for support of schools. In the act authorizing the formation of a state in 1857 congress confirmed this grant of land and the provision was accepted by the people. In this act are found the usual provisions for the establishment of schools in the western states of our Union. It would be wearisome to enter upon the details of legislation by which our present status has been reached. In general it may be noticed that Massachusetts has had great influence in shaping some features of our system. The first section relating to common schools in our constitution is the common declaration that a republican form of government rests for its stability on the intelligence of the people. It is of interest to know that Mr. A. E. Ames, chairman of the committee to report a plan for a public school system to the constitutional convention of 1857, submitted the following preamble: "Wisdom and knowledge, as well as virtue, are essential to the preservation of the rights and liberties of the people, therefore it shall be the duty of the legislature of this state to cherish the interests of education in literature and science, and to establish a general system of public schools; to encourage public and private instruction for the promotion of agriculture, arts, sci-

ence, commerce, trade, manufactures, and natural history of the country, and to adopt all means which they may deem necessary and proper to secure to the people the advantages and opportunities of education."

Various amendments were offered providing for a more specific recognition of the three R's, for the elimination of the words "in literature and science," "for the promotion of agriculture, arts, science, commerce, trade, manufactures, and natural history." It was the ever new strife between the fads and the three R's. Finally the committee on phraseology cut out all reference to specific subjects. We have been slowly, in all the years since the constitutional convention, trying to realize in our schools the ideals set forth in Mr. Ames' preamble.

The state university was established by territorial laws as were the common schools. But no provision was made for high schools. The records of the territorial legislature furnish proof that it was then thought that private academies would bridge the distance between the common schools and the university. Some thirty of these academies were incorporated in the sessions of 1856 and 1857. The names of these schools have long since been forgotten, but they furnish conclusive evidence that tuition schools were expected to occupy the position now held by our high school system. It is a curious fact that the last stand of the opponents of public education has been made in regard to the establishment of secondary schools. It is easy to see why common schools should have the preference. As to the establishment of state universities by western states when they were unwilling to recognize the duty of the public to offer secondary education free to the youth of the commonwealths, it may be said that this action was in part owing to the fact that new states were induced to furnish higher education by national grants of land for the specific purpose of such establishment. Money will go

a long way to remove prejudices. It remained for the state in 1880 enormously to stimulate the extension of secondary education by the offer of special aid to high schools.

Passing over many interesting facts which are now the province of the historian, we come to the present status of our school system. In theory the state superintendent of public schools has always been the head of the system. He is ex-officio member of the various boards, such as that of the regents of the university and the normal school board. He gathers for the legislature needed statistical information. He has quite an extensive patronage in appointive officers, teachers in summer schools, etc. He is referee in case of disputes between county superintendents and their patrons. His influence on the educational tendencies of the state is contingent wholly upon his ability. Legally he has little to say, and curiously enough, as a matter of fact, the members of the legislature are prone to resent too much activity of the state superintendent in securing new legislation. It may be proper here to remark that the state legislature is after all the most potent school board in the state. The state superintendency is a political office. There are no educational qualifications for the incumbent. He need not hold a certificate of the lowest grade which he is supposed to issue with wisdom to the teachers. In one memorable struggle for the office a center rush of politicians, at the last moment, carried the day for a candidate. It is true that politicians would not appoint a man unless he has the backing of some school men. It is also true that we have had very good state superintendents as a rule in Minnesota, but the moral influence of the office would be immeasurably greater were the incumbent obliged to conform to some carefully expressed legislative standard of professional and scholastic excellence. People suspect the state superintendent of being

a politician, and if he keeps his office through the administrations of governors of differing political affiliations it is proof positive in the minds of many of his adroitness in changing his politics as fast as the majority of electors in the state do the same. What the state needs is a superintendent who has not only natural ability but professional standing. He is in rank the superior of the president of the university, and if he is to have the respect of all he must be scholastically the peer of any. The salary is altogether inadequate. Up to within a few years it was less than that received by a principal of one of our city high schools, and even yet it is not much higher. Perhaps these conditions may be accounted for by the fact that the state superintendent is looked upon by many as the head of the common or rural schools only. There is some basis for this view in our present situation as to the county superintendency which will be the next topic discussed.

Perhaps the most perplexing problem in school administration is the rural school. The supply of teachers properly qualified and their supervision while in their work are as yet unsolved questions. The matter of teachers is not a financial question. Recently a county superintendent in this state declared that he could get money to pay rural teachers in his county more than they were receiving in city schools, but he could not get good teachers. There is a dislike among teachers who are prepared for their work toward positions in the rural schools. One of the serious causes for this feeling is the fact that the country teacher is so frequently subjected to unintelligent and arbitrary supervision by the county superintendent. This officer is looked askance at by his fellow county officers and has no honorable place among educators. His position leads nowhere in the profession of teaching. It is not in line of promotion. If the county superintendent do well in a small county

on a meagre salary he may not hope for advancement to a larger county with a bigger salary. He is a product primarily of county politics, and his pull ends with the county boundaries. His salary is small and his tenure of office is uncertain. The law puts upon him many duties for which he is not competent. It asks him to "instruct each school" in the county and also to "instruct its teachers." He is to advise and instruct boards of education as to their duties, advising them of the best methods of instruction, etc., etc. Theoretically he is not capable of doing any of these things. As a matter of fact we have had many excellent county superintendents. If there is any one thing which would give faith in an overruling Providence who makes the wrath of man to praise Him it is the fact that good comes out of our present system of county superintendency. However, we must say, as we have said in regard to the state superintendency, that if the office of county superintendent were placed on a professional basis, the incumbent being required to hold some sort of a certificate that he is an educator, it would raise the body of men who fill these positions much higher in the ranks of professional workers. An amendment to the constitution voted upon at the last election was designed to make it possible to require some professional test of candidates for this office, but the amendment was lost through the lethargy of the people. Doubtless a bill will be introduced at the next session of the legislature taking from the people the right to elect the county superintendent and putting his selection into the hands of some board. In this way the constitutional objection to an educational or other limitation upon the one for whom the people vote will be evaded. Indiana has a law of this sort, but it still makes it necessary for the person selected to be a resident of the county for which he is chosen, thus admitting that the selection is practically a political matter.

Another of the big questions concerning our system of schools is that of certification of teachers. Great advance has been made in recent years. Perhaps one-fourth of the teaching force of the state is authorized by diplomas from normal schools or from the State University. Three-fourths of the teaching force is examined and certified if found worthy, which means that they teach if they pass. The examinations are easy enough and yet nearly 50 per cent fail from year to year to pass them. If, as is often the case, a county superintendent has not enough teachers for his schools he may grant persons third-grade certificates limited to his own county and for one year. This is the lowest form of certificate. We next find second-grade state certificates, granted to those who pass a satisfactory examination in the common branches; the first-grade state for those who have passed additional subjects—algebra, physics, geometry and physical geography. Above these state certificates are the first and second grade professional certificates. These latter certificates are supposed to represent something equivalent to a college diploma, but they do not. As might be surmised the certificated teachers are the weakest. About 85 per cent of the graduates of normal schools are teaching in village or city schools. These teachers represent the most strictly professional body of teachers in the state. The teacher without professional training is found in the rural districts, where there is the least supervision. The average teaching life of a rural teacher is not over three years. Think of the waste to be seen in this ever-shifting, untrained, poorly-supervised body of rural teachers. School men of the state are anxiously devising means to secure for the country schools trained teachers. Wisconsin has a system of county training which is believed to be a step in advance. The state pays a portion of the expense of maintaining these schools and the several counties in

which they are contained the balance. These schools are very elementary and inadequate. The best that can be said of them is that they are better than nothing. Doubtless some bill will be introduced in the coming legislative session to aid the rural schools in securing better teachers. The proper line of advance is in professionalizing the schools, and this can only be done by training the teachers in institutions designed for that very purpose. Here and there a teacher may be trained to excellence while she is in the work of teaching, but such instances are rare. Generally speaking the training they get under such circumstances results only in a mechanical dexterity which passes for skill with the uninformed. Too much of the teaching in all grades of schools, from the kindergarten to the postgraduate work in the universities, is governed by "the-rule-of-thumb" method. As a matter of fact scientific teaching is most strongly supported in the kindergarten, and we may say that teaching as an art, based on pedagogic science diminishes in purity and intelligence as the ages of the taught increase.

Another live topic in education is the need for greater initiative on the part of professional workers. At present, in Minnesota, from the primary school, through the university, real control is too largely in the hands of boards who are not experts. Farmers, merchants, doctors, lawyers, manufacturers, mechanics, preachers, politicians, real estate dealers, insurance men, women's clubbers, bankers, druggists dominate and control education. As the profession of teaching develops, men and women who give their lives to their work look with impatience on non-professional control. The schools of Minnesota have lost many a leader because of the impossibility of doing anything with obstinate and ignorant school board members. We admit, I suppose, that the traditional teacher is not very effective in a business way, but

times are changing. We no longer believe that the leader of our children should be the cast-off of other employments. The times demand a genuine man or woman, not a dessicated shell of one. But men and women of red blood will no longer tamely submit to dictation from those whose lives are spent in raking in dollars, defending criminals, dealing out patent medicines, or wading chin deep in muddy politics. Too often these are the sort of men we have to work with, the men we have to move out of the way of advancing school systems. At the best with good men of other lines of work we are badly handicapped by the necessity of educating board members to the possibilities of education. In fact it is safe to say that much of the energy of educators is spent on recalcitrant board members. The remedy lies in giving more right of initiative to professional educators. How would doctors like it if their hospital patients had to eat the food prescribed by grocers, sailors, tailors, or preachers? Minnesota is not alone in this matter.

The last two years have seen a growing agitation in Minnesota for industrial education. Home economics, including domestic art and domestic science, manual training, including iron and wood work, agriculture, and commerce are coming to the front as school subjects. There is a much greater demand for teachers of these subjects than the supply. In my opinion the movement is a genuine reform and must be reckoned with. It is not necessary to remind this audience of the futility of much that we have called education. We have spent the child's years and have not educated him to meet the demands of life. There is great difficulty in establishing these new lines of work. The tendency is to rush into them with unprepared teachers, with unsuitable equipment, with inadequate financial support, and the result is failure. There have been several attempts in Minnesota to establish in villages training in agriculture. Two ex-

periments are especially significant, one at Canby and one at McIntosh. The one at Canby includes the cultivation by students of crops on a ten-acre patch of land near the village school. Canby is strictly an agricultural village, if it is proper thus to designate a village which lives off of agriculturists, inasmuch as the prosperity of the village is intimately bound up with that of the farmers. The experiment at McIntosh is especially interesting. This is a village on the eastern border of the Red River valley. The inhabitants are Scandinavians of the peasant type. The village is not remarkably prosperous inasmuch as crops have been poor late years and other villages are close about it. The people pay 26 mills school tax, and have done as much for years, sometimes higher than that. There are about 700 people in the village. Being ambitious to educate their children at home, they have slowly built up a school from a small graded school of three teachers ten or twelve years ago to one of ten or more at present. There is no race suicide in the village, and so the lower rooms are always filled to overflowing, but the pupils have scattered in the upper grades. The attempted high school work has been until the last year or two along old lines. Latin, orthodox chemistry, and other like studies have prevailed. Tradition brought a few students to the high school. Parents reasoned the subjects studied had made them leaders. But many of the children became easily discouraged, and a pupil rarely reached the senior class of the high school. Three years ago Mr. A. M. Dunton was elected superintendent. He is a man of the restless sort, always digging into things to see what they are made of and whether or not they are made in the best way. It looked to him incongruous that the boys and girls of that region should be studying subjects handed down bodily from past ages and which had no practical bearing on the life those children were to lead. Why should

Ole read about the wading of marshes by Caesar's army in Gaul, when as good a question for him was how to make the old marshes left by Lake Agassiz fertile and productive for his father? With such thoughts in mind, Mr. Dunton set to work at the problems. He persuaded the school board to put up shops on the school grounds. The board furnished the material and the boys of the village built the shops, not charging the district for this work. He studied soils instead of drugs in chemistry. The botany was concerned with local flora of the sort which furnished food for the patrons of the school. Corn, wheat, oats, plants furnished problems in their growth, in their enemies, which were good stuff for the brains of the boys and girls to think upon. Rotation of crops was as fruitful a topic for the school as sulphuretted hydrogen had been. The chemistry of foods was of educational significance. He tried to get at real problems of life. At meetings in the village and surrounding country school houses he told in a simple way that fact that one to improve himself in better things must have an unexpended balance between the income and the actual necessities of life. He told his hearers that, in order to have this balance, there must be a larger income or the necessities of life must be reduced. He told them that his school was working at the problem at both ends, the cooking school was concerned, not merely with the preparation of food, but with the preparation of it so that it would be most nutritious and economical. The people have responded to his appeals. They furnish the money to carry on the work. They furnish and keep in school the children. He has doubled the attendance in the high school, and the attendance in the room next in rank to the high school has increased from a dozen to eighty. This means that he will have in a few years a high school pupil for every five citizens in the village. At that rate Minneapolis would have about as many

high school pupils as it now has pupils in all grades of the public schools. Of course, it is too soon to state definitely what will happen in McIntosh. It may be that opposition will grow up in the village through jealousy of politicians toward the present school board members. The opposition will get its revenge by carrying the election against the present regime and scattering its work to the four winds of heaven. It may be that some other larger place will want Mr. Dunton at a salary which he cannot in justice to his family refuse. I know of no man in Minnesota to take his place, but I wish in this presence to make mention of the work and to give it as my opinion that it is the most remarkable work being done in Minnesota schools today. Does it not suggest that we need schools to train men to do the work now being tried out in McIntosh, and that the legislature should watch for opportunities to start such centers, not have to be importuned to establish them?

My topic is so comprehensive that one might spend hours in its elucidation. I have attempted to touch briefly only some of the most important topics. We are making progress, but slowly. School folk are conservative at best, and they are hampered by the ignorance of school boards and the prejudices of the people. They are not aggressive, yet their occupation makes them prone to dictate rather than to guide, and the people resent dictation from their servants. Therefore, the school master neither dictates nor guides. The day will come when the school as an institution will measure up more closely in power of initiative with the state. Then shall we have professional experts who will develop our school system along intelligent lines and the people will reap the benefits.

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